ACCS

See Page 15

MODERN TRANSPORT

"THE TIMES" OF THE TRANSPORT WORLD

BRAKES ON NEW ZEALAND SHUNTERS

See Page 11

VOL. LXXXIII No. 2148 [*Registered at the G.P.O. as a newspaper*] LONDON, JULY 16, 1960 PRICE ONE SHILLING

CURRENT TOPICS

Meeting the Commission's Deficits

ALONG with several Civil Supplementary Estimates a new estimate for a grant of £105 million to the B.T.C. to meet the Commission's anticipated deficit during the current year was presented to Parliament last week. This was foreshadowed in the Chancellor's Budget speech when he said that in the calculations he had made up to that time he had included below the line a sum of £90 million for the expected deficit of the Commission in 1960. This included the cost of the 5 per cent interim increase in wages awarded after publication of the Guillebaud report but nothing in respect of the further increases in wages resulting from the negotiations between the Commission and the unions then about to take place. Most of the extra £15 million provided in the estimate is to meet the full wage award for the year. In the past the Commission's deficits have been financed by advances from the Exchequer, amounting since 1956-57 to nearly £297 million, on the basis that both principal and interest would eventually be repaid out of profits. The Chancellor explained, however, that the prospects of the railways and the Commission were no longer such as to justify the continued financing of deficits by repayable advances. The sum of £90 million (now £105 million) would therefore be transferred from below to above the line, the effect being that the deficit would be met from revenue —"a sharp reminder of the harsh realities of a disturbing situation." The action marks a drastic change in the financing of the railways. In his statement in the House of Commons on March 10 the Prime Minister said that it called for a reshaping of the capital structure of the Commission. Hence the appointment of the Stedeford Committee whose recommendations—for good or ill—are to form the basis of fresh legislation in the autumn.

An Effect of Public Knowledge

HAVING sponsored five papers dealing with subjects held to be of general significance for the community, all of which are now out of print, the London Press Exchange, Limited, has now published a sixth, *Away From It All*, which considers the market for pleasure travel. The booklet, which costs 5s. and may be obtained from the L.P.E. at 110 St. Martin's Lane, W.C.2, is in fact a survey rather than a forecast and sets out in the main to record trends, although it does not hesitate to underline possibilities, whether favourable or otherwise. An inquiry by Research Services, Limited, one of the constituents of the organisation, indicated early this year that, if all carried out their intentions, there could well be some slight falling away from the preponderant choice of the British seaside, in favour of holidays abroad. Against this may be set reports that travel agents are finding business less plentiful this year. This it is suggested may have among its causes the possibly excessive number of entries to the trade and the severity of competition. This, in turn, has perhaps led to some paring down of standards by struggling firms, especially in the handling of inclusive tours. The public itself is becoming rather more experienced and enterprising and, consequently, more inclined to adopt a do-it-yourself policy, whether individually or in groups, while price competition from certain of the carriers must be tempting more travellers to try to better for themselves the agents' package deals. It is considered that this tide could turn, but, if it does not, a number of the smaller fry are in danger of being left stranded on the beach.

New Inter-City Trains

INTER-CITY trains planned by the North Eastern and London Midland Regions of British Railways will begin in the autumn between Hull, Leeds, Manchester and Liverpool, giving an intensified and accelerated regular interval service. High-powered multiple-unit diesel trains of entirely new design are now being built in British Railways workshops at Swindon; the first has been delivered and will shortly undertake its trials. Each will comprise six coaches, four of which are powered. Each has two 230-h.p. underfloor B.U.T. engines of Albion type built by Leyland Motors. The enhanced power rating will be of particular value on the gradients encountered on this route. The bodywork of the driver's cab—a single fibreglass moulding—is in modern styling with a swept-back roofline and wrap-round windscreen. Suspension has received special study and smooth-riding is aided by use of hydraulic dampers and rubber cushioning. Effective sound insulation is provided by lining the bodywork with ½-in. sprayed asbestos sheeting. In the first-class accommodation this is supplemented by double-glazed windows having the additional advantage of preventing inside condensation. Safety glass is fitted throughout. An oil-fired heating system is thermostatically controlled in the open saloons, while in the compartments a hand-control enables the passengers to regulate the temperature to their liking. The 292 passengers are accommodated by 178 seats (42 first, 136 second) in open saloons and 114 seats (18 first, 96 second) in compartments. Each train set includes a light grill buffet with standing bar. An informal contemporary-styled saloon has standing room and pedestals provided for those taking only drinks, with table seating for light meals and snacks.

LEADING FEATURES IN THIS ISSUE

Portrait	PAGE
Mr. Percy A. White, M.Inst.T. ..	9
Special Articles	
Freight on German Motorways ..	2
Rapid Transit Plan for Los Angeles: £189 Million Metro Recommended	3
The Carter Paterson Story: 3—Inevitable Co-ordination with Pickfords	7
Tributes to Chairman of P.S.V. Operators	9
Golden Jubilee of A.P.V.	9
The Port of Goole: Origins and Development	11
People in Transport	13
Ergonomic Conference for London ..	14

Modern Airways Section	PAGE
Britannias in Operation: Manufacturer Reports Reliability	5
Success of British Landing Aid ..	5
Regular Features	
Book Notices	6
Commercial Aviation	9
Financial Results	14
Forthcoming Events	14
Important Contracts	14
Lorry, Bus and Coach News	4
News from All Quarters	8
News Summary	2
Shipping and Shipbuilding	14
Social and Personal	15

Turbines For Commercial Vehicles?

GAS turbines are simple and have good torque characteristics; they are likely to be used first in heavy high-speed commercial vehicles on motorways, says Dr. J. H. Weaving, chief gas turbine engineer of the British Motor Corporation, in an article in the current edition of *Transport Efficiency*, the B.M.C. commercial vehicle magazine. He goes on to say that motorways will allow fullest use of the high horsepower developed by the turbine and that this type of vehicle will allow room for the necessary and rather bulky heat exchanger. Considerable experience, he adds, has shown that much development is necessary before the turbine can become an efficient and feasible proposition. B.M.C. research on gas turbines started in 1950 and the first fruits —a 100-h.p. turbine—was demonstrated in an Austin Sheerline car in 1954. This unit, a two-shaft engine, originally with a heat exchanger of 0.65 thermal ratio in the vehicle application, has now been developed as an industrial engine with an 0.8 thermal ratio heat exchanger and this could be adapted for automotive purposes. Dr. Weaving suggests that the gas turbine could offer a substantially improved power unit with many advantages, including high specific power, built-in torque converter, mechanical simplicity with low maintenance requirements, easy starting, no cooling water and low lubricating oil consumption. The many difficult problems include heavy fuel consumption, high peripheral speeds, slow acceleration, noise and lack of engine braking. In the article curves are plotted for thermal efficiency and fuel consumption of a gas turbine against pressure ratio under full load for heat exchangers of various thermal ratios up to 0.9 and for specific fuel consumption on a level road at various speeds. From these curves it is evident that with an 0.8 thermal ratio heat exchanger it is possible to make a gas turbine as efficient as the modern petrol engine, but that further development is required to reach diesel engine figures. Dr. Weaving thinks it is possible to reach diesel engine performance by careful development of each section of the gas turbine unit and such individual development of compressor, turbine and heat exchanger are now being undertaken by B.M.C.

Controlling Light Engine Working

AT Ardsley Station on the Doncaster—Leeds main line a collision occurred at 10.8 p.m. on October 26 last between an express passenger train and a light engine; 22 persons were injured but only two were detained in hospital. Reporting on it, Colonel D. McMullen, inspecting officer of railways, states that the primary cause of the accident was the absence of any clear block regulation or instruction in the Ardsley Station box to cover the frequent movement of engines for the short distance into the forward section to Ardsley North. Consequently an undesirable practice of clearing the starting signal without block-signalling the engine forward had been adopted for many years and had been condoned by the local supervisory staff. The immediate cause, he says, was a simple human failure by the signalman, who forgot that the light engine was standing on the main line and cleared the signals for the express; he did not make use of the lever collars provided to prevent just such forgetfulness. A contributory cause was the failure of the driver of the light engine to send his fireman to the box in accordance with Rule 55(b). At places where such movements are frequent North Eastern Region practice has been to detail, in the signalbox instructions, the action to be taken. This had not been done at Ardsley but the situation has now been rectified and the inspecting officer hopes that similar action, where necessary, will be taken at other boxes. Implementation of a comprehensive scheme for track circuits and block controls at Ardsley, which has been prepared, should eliminate the possibility of further accidents of this nature, states Colonel McMullen. At his request the regional officers are examining the situation at other busy boxes, and he recommends similar action in other regions.

New Santa Fe Line in Arizona

AMERICAN railway engineering history was made on July 6, claimed the Santa Fe system, when the first quarter-mile lengths of welded track on a trans-continental main-line railway were laid near Williams, Arizona. Each consisting of 37 standard 39-ft. rails, pressure-welded electrically by a Swiss process, the lengths (dubbed "ribbon rails" by Santa Fe engineers) will be used for the new 44-mile double track line now being constructed by the Santa Fe Railway to replace the existing tracks between Williams and Crookton. At present severe operating restrictions are imposed by heavy grades, sharp curves, limited tunnel clearances and other conditions. The new line, which is routed through a rugged mountainous area to the north of the existing tracks, will be equipped with banalisation and automatic train stops to permit high-speed operation. Economies are expected to result from reduced maintenance and motive power requirements, and a substantial reduction—up to 1½ hours—in all running times. Hitherto, welded rail has been used only when changing worn lengths.

Mechanised and Manual Labour

BURRO cranes and rollers are employed to set the 32-ton lengths in place. Nearly 600 men and 150 machines prepared the new formation. It is estimated that more than 11 million cu. yd. of spoil will have to be moved. Modern machines and methods are augmented by the skilled manual effort of Navajo Indian track workers. The original single track was laid in 1883 and doubled in 1911. The new line will be rated for speeds of 90 m.p.h. for passenger trains and 60 m.p.h. for freight. Fast trains will use crossovers to bypass slower freight trains without reducing speed under the traffic reversal signalling installed. The re-location of the Williams—Crookton section of the transcontinental railway from Chicago to California is one of two such projects in northern Arizona. The other, which awaits Interstate Commerce Commission approval, entails the construction of 37 miles of single-track railway in a valley location on the Phoenix line, extending from Abra siding, 29 miles south of Ash Fork, to Skull Valley, 22 miles west of Prescott. This will reduce the total length of line by some 14 miles with the consequent elimination of severe mountain grades on the existing Atchison, Topeka and Sante Fe line.

The Late Herbert Crow

IT was once said of Herbert Crow, whose death we record elsewhere in this issue with deep regret, that if all hauliers had had his secrets of management there would never have been any demand for nationalisation. His business, mainly in bulk liquids, was not, as it happened, nationalised; over a period of 40 years it has developed on steadfast principles of customer service, reliable vehicles and good staff relations. Staff dinners and entertainments, presided over by Herbert Crow and his wife, were really gatherings between staff and management; they were made the occasion of safety award presentations, but they also witnessed a flair for choosing a good cabaret entertainment and a good dance band. Upright and godfearing, Crow brought his knowledge of chemistry into the transport business and made a wonderful success of his chosen line of haulage with the aid of a well-picked team of assistants. He was particularly proud of the high proportion of his large fleet which was housed and serviced under cover. He was Junior Warden of the Worshipful Company of Carmen. He served with distinction the Institute of Transport, of which he became a member in 1930, and was in office as hon. librarian from 1953 to 1956. Last year he was elected a vice-president. He served also the Road Haulage Association and its predecessors over many years going through the chair of the Metropolitan and South Eastern Area in due course, and it was a crowning achievement to his career that he should have become national chairman a few short weeks ago. Haulage has lost a great servant and his business a good master.

Operating Efficiency
Full-forward control, with new wide-vision cab over front springs and power unit forward of front axle provides exceptional bodyspace and balanced load distribution.

Sturdy and Powerful
Ample power is provided by either a fully-proved 4-cylinder petrol or diesel engine, whilst chassis, body and cab are all built to endure the most gruelling working conditions.

Economical Performance
The Karrier 'Bantam's' combination of strength, lightness and accessibility reduces both running and maintenance costs to an extremely low level.

Salient Features
Powered by either 4-cylinder o.h.v. 53 b.h.p. petrol engine embodying chrome cylinder bores for phenomenal life, or 54 b.h.p. 4-cylinder light diesel engine for great economy.

Full-forward control, giving exceptional manoeuvrability.

Bodywork cleared of obstructing wheel arches.

Over 11′ bodyspace on 8′ 2″ w.b. chassis; over 14′ on 10′ 2″ w.b. chassis.

Powerful hydraulic brakes.

Comfortable all-steel cab with panoramic windscreen.

Plain facts!

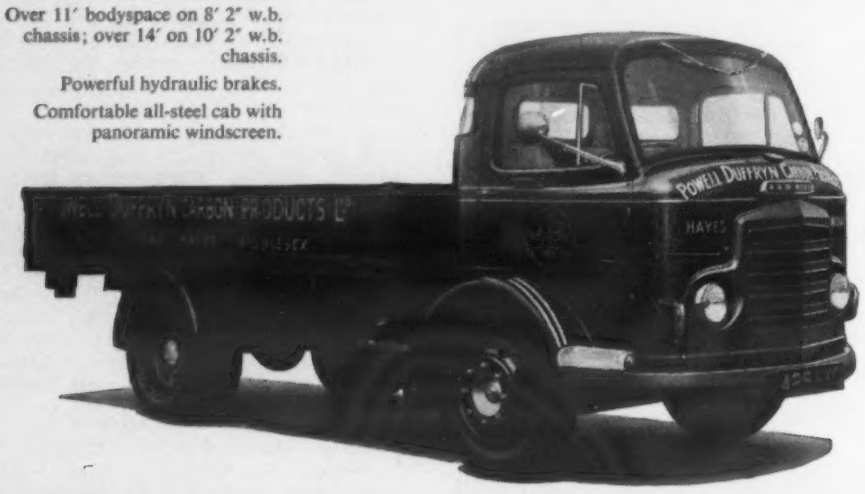
reasons why the

KARRIER 'BANTAM'

2-3 TONNER

(Petrol or Diesel)

meets every transport need



A ROOTES PRODUCT — BUILT STRONGER TO LAST LONGER!

KARRIER MOTORS LTD. LUTON BEDS. EXPORT DIVISION: ROOTES LTD. DEVONSHIRE HOUSE PICCADILLY LONDON W.1

There's nothing like National Derv

FOR GETTING THE BOTTLENECKS OUT OF YOUR SYSTEM

Why not let us send you a copy of this book and arrange these agency facilities for you? We will also be glad to give you details of our bulk delivery service.

Under the National Derv Agency System, your drivers can refuel at any National agency station. All they need is a National Derv Agency card. *No money need change hands.* A detailed account is sent to your office. And of course National Derv can be delivered direct to bulk storage tanks, anywhere in Britain.
More and more fleet-owners are changing to National Derv. It's a fine fuel, and the National Derv Agency System is a fine way of getting it.

NATIONAL DERV

National

Bl/1a

NATIONAL BENZOLE COMPANY LIMITED MERCURY HOUSE · 195 KNIGHTSBRIDGE LONDON S.W.7

MODERN TRANSPORT

Published Every Friday

RUSSELL COURT, 3-16 WOBURN PLACE, LONDON, W.C.1

Telephone Number: TERminus 0303 (3 lines)
Telegraphic Address: Transpubco, Westcent, London

ANNUAL SUBSCRIPTIONS
BRITISH ISLES, 47/6; CANADA, 45/-;
ELSEWHERE ABROAD, 47/6
payable in advance and postage free

The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.

Freight on German Motorways

SO far freight vehicles do not preponderate on our principal motorway during much of the day and in any event our six-lane stretch from St. Albans northward mitigates the ill effects of lorry traffic on private cars. The result as far as the private motorist is concerned may be judged by the fact that with the same vehicle and as nearly as possible the same driving technique test runs in England between the Watford Bypass and Crick produced average speeds between 71 and 75 m.p.h., whereas on German autobahn runs the average on a number of trips of similar length was reduced to 55 to 63 m.p.h. —partly by the density of lorry traffic on four-lane roads and partly by the number of sections on which maxima of 62 m.p.h. or less are in force. In Germany the impedance to the private car has been somewhat lessened since lorries over 4 tons were prevented from overtaking on steep gradients. An interesting account of the development of freight traffic on the autobahn system is given in the current *British Transport Review* by Dr. Gunther Lönnecke, traffic correspondent of the *Handelsblatt*, Düsseldorf, who refers to the original design of the network as intended for private cars on an east-west traffic flow. Postwar partition of Germany has left the Federal Republic with a north-south traffic flow and a heavy emphasis on freight traffic on the motorways—no doubt attracted to them at first by the indifferent nature until recently of the majority of the rest of the road layout.

Reorientation

ONE result of this reorientation has been that whereas 1 in 12½ was thought suitable in hilly terrain as a ruling gradient, 1 in 25 has now been adopted as the standard. Moreover, whereas the earlier design had a 24-metre overall width, this has now been enlarged to 28 metres to provide shoulders so that lorries which break down can be parked off the carriageway. It is feared from the national economic viewpoint that the motorways are causing the railways to be underused while the lorry population is increasing at a fast rate. By 1953 the number of lorries in the Federal Republic was double the prewar figure; between then and 1956 capacity of vehicles owned by hauliers went up by 28.5 per cent for motors and 26.6 per cent for trailers, compared with long-distance ancillary users' vehicles, which increased 11.9 and 12.7 per cent respectively. In this period forwardings by long-distance hauliers went up by 86 per cent, and the 21,000 lorries were intensively used, covering 85,000-90,000 km a year each—or 55,000 miles. The average forwarding distance was no less than 267 km (about 165 miles) in 1957. Two years before this industry had had a 5 pfennigs a kilometre tax put on ancillary vehicles over 4 tons in unladen weight and this artificial restriction stimulated haulage business still more, so that annual mileages of 75,000 or more per vehicle, or vehicle and trailer outfit, are not uncommon for hauliers. Long-distance firms enjoyed much increased business; the ton-kilometrage rose from 13,950 million in 1956 to about 16,500 million in 1959. By use of turnover drivers quick turnrounds and intensive operations over journeys of 300 to 400 miles are achieved.

Accident Rate

ALONG motorway sections between the Ruhr, Köln, Frankfurt and Stuttgart up to 5,000 heavy lorries may pass in each 24 hours. Intense use of this nature results in severe damage to the original concrete road, which, with singular lack of foresight, was not reinforced; renewal of the surface involves difficulty, danger and delay while all traffic in both directions is concentrated on one carriageway. Accidents to lorries are, in Dr. Lönnecke's view, numerous and mainly due to drivers falling asleep from over fatigue or to brake failures on long down gradients. In 1955-58 in the Federal Republic 17.7 to 21.8 per cent of all vehicles in accidents were lorries; insurance companies deem the vulnerability of heavy lorries as 2,200 to 250 for cars; motorways are also believed a source of severe damage. Driving hours and rest periods on buses and lorries are now controlled in Germany and from March, 1956, a third braking system was required. An interesting provision in the cause of eliminating frustration by slow vehicles climbing steep gradients was the laying down for new lorries of a minimum engine power of 6 h.p. per ton of gross weight. Heavy traffic is prohibited on the motorways from 10 p.m. on Saturday to 10 p.m. on Sunday, but the five-day week now ensures that fine Saturdays are days of chaos with thousands of private cars confounded by homing lorries driven at their drivers' uttermost to attempt a return to base before the curfew.

Safety Measures

WITH the object of securing greater safety, the author of the article points out, an Order of March 21, 1956, reduced the total permitted weight of driving vehicle and trailer from 40 tons to 24, the length from 20 metres to 14 and the axle weight from 10 tons to 8 for a single axle and from 16 tons to 12 for a twin. The last-mentioned reductions were made with the object of reducing damage to highway surfaces. This Order came into effect at the beginning of 1958 but has been a matter for strong protests from industry, partly because it is more restrictive than the general European scale of dimensions. The Minister of Transport, Dr. Seebohm, appears now to have conceded the justice of this and amendments are in prospect which will authorise an increase to 32 tons total weight, 16 metres in length and a 10-ton axle load. It is thought that the regulations may be framed so as to encourage rail and road co-operation in piggyback operations. As trailer couplings occupy 1½ metres of length the present regulations have favoured trailers, because a combined length of 14 metres was allied to a permissible trailer length of 13 metres, but this attraction would fade with the 16-metre European dimension. There is the possibility of a complete ban on trailers behind lorries (the popular bus trailers are already under the hammer, although there is no obvious diminution in their numbers at present); an advantage of their disappearance to the growing numbers of private motorists would be the reduction in the burden of overtaking units over 50 ft. in length moving at 40 or 50 m.p.h. It is evident that we can learn from German experience; although we have obviously escaped many of the shortcomings found in that country, it must be clear that the Ministry of Transport should never again entertain four-lane motorway construction such as on the feeders to M1 or the Maidstone bypass. The need for action to complete our English network is nevertheless urgent.

NEWS SUMMARY

A MOTION urging Government action towards initiation of the Channel Tunnel project has been tabled by 57 Members of Parliament representing all parties; it is a call for consultation with the French Government with a view to an immediate start on the work.

A Champion tractor with Perkins Four 270 diesel engine owned by Chamberlain Industries Pty., Limited, of Sydney, has been three times round Australia on breakdown and car reliability trials. A modified final drive gives it a top speed of 78 m.p.h., and it has covered 1,032 miles across the desolate northern wastes in 22½ hr.

A new scheme for a Metropolitan railway system has been evolved for Los Angeles, this time using pneumatic tyred trains; it is described on page 3.

We record with deep regret the death of Mr. Herbert H. Crow, national chairman of the Road Haulage Association. A biography appears on page 15 and a memoir on page 1.

The British Government has decided in principle to support financially the development of four types of transport aircraft. They are the Vickers VC10 and Super VC10, the de Havilland DH121 and the Armstrong-Whitworth Argosy. See page 9.

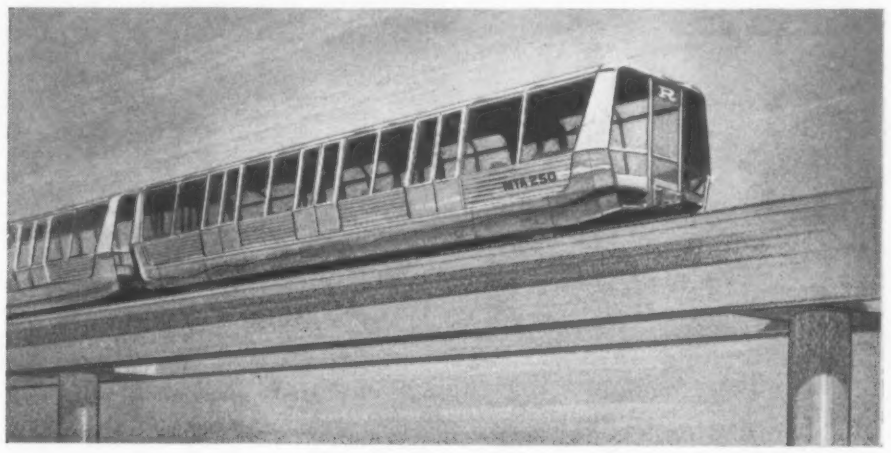
The transatlantic partnership formed a year ago between two leading British and American gear manufacturing companies, the David Brown Corporation of Huddersfield, and Foote Bros. Gear and Machine Corporation, of Chicago, has been amplified to provide new distributive arrangements for David Brown gear products in Canada through David Brown-Foote Gears, Limited, of Toronto. David Brown (Canada), Limited, will now concentrate on tractors and farm machinery sales. In California David Brown business will be handled through the Foote Corporation.

RAPID TRANSIT PLAN FOR LOS ANGELES

£189 Million Metro Recommended

By Our Special Correspondent

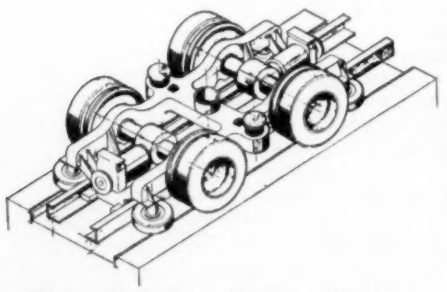
CONSULTING engineers have recommended a £189 million rapid transport system to the Los Angeles Metropolitan Transit Authority. In their report, submitted to the Authority recently after eight months of study, the consulting engineering firm of Daniel Mann Johnson and Mendenhall, of Los Angeles, proposes the adoption of a 75-mile network of



An impression of the lightweight air-conditioned cars proposed for the recommended Los Angeles Metro

"supported vehicles running on rubber tyres on concrete tracks." This is the equipment the firm considers most adaptable to local conditions and routes. It appears to dispose once and for all of the arguments advanced over the past few months by the many proponents of one or other type of monorail. In the course of their investigations the engineers studied all types of equipment, and concluded that any one of three systems—suspended monorail, supported monorail, or supported Metro system as they have termed it—could be successfully adapted to the Los Angeles metropolitan area. However, cost comparisons indicated first that a suspended system would be more expensive to construct and, secondly, that added to the supported monorail's problems of switching and car mechanism were higher maintenance costs. On balance, therefore, the Metro system was felt to offer the most economical method of covering the recommended routes, 35 per cent of which allow for operation on the surface.

Map showing the four routes envisaged for initial construction and those put forward for subsequent development. Of the first routes much of the mileage to Reseda and to Santa Monica would be overhead and the others would be largely surface on existing rights-of-way



Bogie envisaged for the new trains represents a development of that used in Paris

Important advantages cited for this type of operation included its ability to run on the surface, overhead or underground, as required, thus affording greater flexibility, and the fact that its trains can also run on standard gauge conventional rails.

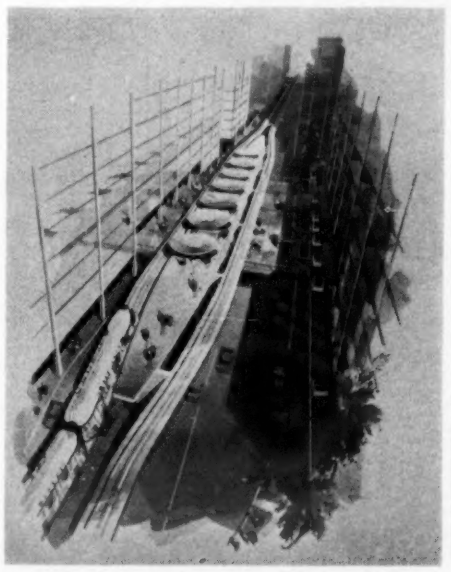
Rolling stock as conceived by the consultants for this system is an advanced design of lightweight air-conditioned vehicle of modern appearance running on pneumatic tyres at high speed with very little sound. Each car would accommodate 54 persons seated in comfortable aircraft-type seats with ample space for standees in peak periods. Trains would operate as two-, four- or six-car units, but provision would be made for running eight-car trains later, if required. Development of a completely automatic control and operating system, coupled with special safety features, would mean that trains could operate at speeds up to 80 m.p.h., according to the consulting engineers, who advocate having one attendant per train for emergencies despite the automatic control system's capability of unattended operation.

Based on the four broad corridors recently recommended to the Authority by Messrs. Coverdale and Colpitts, consulting engineers for traffic studies, route alignments and station locations have been developed for four lines running approximately north, south, east and west from the central business district, i.e. to Reseda, actually north-west, Long Beach, Covina and Santa Monica respectively. Included are 51 miles of overhead line in city streets and other rights-of-way, 21.6 miles at ground level along Pacific Electric and other rights-of-way and 2.3 miles of tunnel under private property in an area where streets are not suitably orientated and where going underground is considered more economical than acquiring surface rights-of-way. Surface mileage includes 6.4 miles of converted Pacific Electric line in the San Bernardino Freeway, which is already separated from vehicular cross traffic. Also included is 10.5 miles of surface operation along the Pacific Electric right-of-way to Long Beach, with some grade separation.

Services

The Los Angeles Metro would provide peak-hour service with average speeds between 35 and 40 m.p.h., including 20-second station stops. This compares with the average mass transit speed throughout the United States of 18 m.p.h. and the Los Angeles freeway peak-hour average of 25 m.p.h. During peak periods a train would take 27.6 min. to cover the 16.7 miles from downtown Los Angeles to Santa Monica, 36.8 min. for the 21.65 miles to Reseda, 33.4 min. for the 21.95 miles to Covina and 31.4 min. the 20.05 miles to Long Beach. With skip-stop operation the firm claims travel times could be cut by as much as 26 per cent.

These proposed routes make use of city streets and existing rights-of-way. For operation within existing rights-of-way it is considered that operation would best be achieved by converting the existing sleeper and ballast rail installation to dual concrete tracks for pneumatic-tyred working. Despite the immense mileage of freeway construction in and around Los Angeles, inadequate space for construction and maintenance work precludes their use in the proposed system, except as noted for the median strip of the San Bernardino Freeway.



An impression of a station in the central business district showing the island platform and interchange with the mooted Carveyor System

In the central business district tunnel construction is quite feasible but not recommended as the consulting engineers feel that overhead construction would be far cheaper. The use of

(*Continued on page 13*)

AEI
LOCOMOTIVES
for
NEW ZEALAND

AEI has supplied 18 of these 420 h.p. 41 ton Diesel-electric Locomotives for use on New Zealand Government Railways — one of the many traction orders carried out recently.

Enquiries should be sent to your local AEI Office or direct to AEI Traction Division, Trafford Park, Manchester 17

AEI TRACTION DIVISION
Associated Electrical Industries Limited
Manchester, Rugby and London
K/T 009

H&W Diesel Engines
for LOCOMOTIVES, SHUNTERS & RAILCARS

TWO-CYCLE DIESEL ENGINES
AND
FOUR-CYCLE SUPERCHARGED DIESEL ENGINES
FOR
RAIL TRACTION

Supplied as straight in-line or 'V' type units in powers from 250 b.h.p. to 2,000 b.h.p.

HARLAND & WOLFF
LIMITED
Enquiries Queen's Island Belfast London Office 9 Whitehall, S.W.1
BELFAST GLASGOW LONDON LIVERPOOL SOUTHAMPTON
L.868A

LORRY—BUS—COACH

Municipal Operators Discuss Minibuses

OPERATORS of minibuses and unlicensed vehicles used for carrying workpeople were sharply criticised at the annual meeting of the North Western area of the Municipal Passenger Transport Association at Lytham St. Annes on July 8. Representatives of the 34 municipal undertakings were invited to give information about "pirates" to a deputation which is to meet the Traffic Commissioners to discuss the problem. Mr. J. McKnight, general manager of Wigan Corporation Transport Department, said local authorities should determine whether small operators had licences. Factory workers could be informed that by using such transport they were acting against their trade union colleagues.

Alderman Samuel Jones, chairman of Leigh Corporation Transport Committee, said: "I think miners are some of the biggest culprits. They have a travelling allowance of 11d. in the 1s. for over 5s., but you can see a number of private vehicles carrying passengers to and from the pits. Miners get their allowance in their wage packets every Friday and this ought to be paid to the buses." Alderman John Faulkner, chairman of Lytham St. Annes Transport Committee, was elected area chairman in succession to Alderman J. P. Ashton of Wallasey.

East Midland Modernisation

WORK is in progress at the Clowne depot of East Midland Motor Services on modernisation of the frontage and the fitting of Bolton shutter doors. The premises are also being completely rewired and the lighting is being converted at the same time to fluorescent. Another improvement is to the steel structure of the garage so that double-deck buses will be able to pass between its two sections. On page 13 we publish a photograph taken during an inspection of the depot by the East Midland directors accompanied by the chief officers.

Now it's Denationalisation in Pakistan

THE Government of West Pakistan has decided to pull out of the transport business, Mr. M. Kurshid, Provincial Chief Secretary, announced in Lahore. He said that the question of how and when was under active consideration, but he was quite positive that it would be done quickly. Mr. Kurshid said that it had also been decided that proprietors of buses and goods vehicles who obtain a route permit would be permitted to operate in any part of the province and there would be no regional restrictions. Meanwhile, the Development Commissioner, Mr. B. A. Kureshi, is preparing a plan to reconstitute the West Pakistan Road Transport Board with a view to withdrawing Government control and substituting private capital. The Pakistan Government has 25 per cent shares in the provincial Road Transport Board while the rest of the shares are held by the provincial government. A firm decision not to expand the activities of the Road Transport Board has been taken. No new routes are to be taken over by the Board. Total investment in road transport stands at Rs.58,000,000. The main consideration for crying a halt to the policy of nationalisation and a possible denationalisation of the road transport is said to be that the Government needs capital for other projects.

Revised London Bonus Scheme Rejected

DISCUSSIONS occupying several hours on Tuesday failed to persuade delegates of London busmen to accept the revised bonus incentive scheme put up by London Transport primarily to overcome the staff shortage. The voting was 34 for and 79 against. The scheme had been backed by union national officers, but its opponents argued that it would not solve the basic problem and that there must be a full-scale inquiry into pay and conditions. The national passenger trade group of the T.G.W.U. was to discuss this demand for an inquiry at its quarterly meeting on Wednesday, but it appears unlikely to receive official backing at least in its present form.

A.E.C. Mammoth Major eight-wheeler of T. Wall and Sons, Limited, with Strachans insulated body; right, S.P.D., Limited, operates this Albion Claymore underfloor-engined delivery van with Sparshatt body. A nearside up-and-over cab door is fitted and the forward body compartment is designed to accept an insulated container

Hard Shoulders Inadequate

INSPECTING the work in progress on the Ross Spur motorway, from Tewkesbury to Ross-on-Wye, on Monday, the Minister of Transport, Mr. Ernest Marples, admitted that the 8-ft. wide hard shoulders "were not really wide enough." But they were designed before we had learned the lessons of the M1.

Bonus for B.R.S. Depot Staff

ON the understanding that present work will be performed in fewer hours—generally one hour less a day—operating staff in British Road Services depots will receive a bonus payment of 15 per cent on basic rates with effect from August 8. Driving staff in British Road Services already have a similar bonus and this new arrangement applies to the balance of staff who are covered by the B.R.S. operating grades agreement. Depot staff had expressed discontent since the rescheduling of trunk services in January and there was recently a "go slow" at some London parcels depots.

Roadrailer Going on Test

IT is announced by the Eastern Region that its Roadrailer semi-trailer vehicle, capable of transfer to rail, will undergo rail tests between Bishop's Stortford and Braintree next week. Road trials have already been successfully completed, it is said. The main purpose of the rail trials is to prove the braking system. Once this has been done the way will be clear to put the new vehicle into production.

Road Used as Loading Area

COMPLAINTS from local residents in a road in Harlesden, London, N.W.10, concerning the parking, it was alleged, of up to ten lorries at one time in the road for long periods, and of the transferring of loads in the road were answered in the House of Commons by Mr. Dennis Vosper, Under-Secretary at the Home Office. He acknowledged the receipt by the police of numerous complaints concerning the operator of a waste recovery factory and said that prosecutions had been taken out against more than half of the employees of the firm, which had itself been prosecuted twice (he did not disclose what the prosecutions were). The local authority contemplated further action.

Driver Disposed of Goods

CHARGED on three counts of stealing while a servant of Robert Earl and Sons (Transport), Limited, haulage contractors, Sheffield, a driver, John Falcon, was said to have formed a "well-set-up association" with a garage proprietor for the disposal of metal. He was sent to prison for six months, convicted of stealing a quantity of brass turnings value £22; five ingots of brass value £6 17s. 6d.; and 11 metal ingots value £20 3s. The garage proprietor, Jack Bird, aged 48, of Smithfield Road, Sheffield, pleaded guilty to receiving the brass turnings and ingots of brass, knowing them to have been stolen, and was fined £40. Mr. C. Adams, prosecuting, said Falcon had taken advantage of his position to sell metals he had either been collecting or delivering for the Sheffield Smelting Company. The five sacks of brass turnings had been collected from a firm in South Wales and dropped off at the garage belonging to Bird. Mr. Adams said: "Apparently it's a well-set-up association between these two that goods which Falcon has stolen should be dropped off at this garage. Bird subsequently disposed of them." Mr. Thornton Lambert, defending Falcon, who pleaded guilty, said he made only about £9 from the transactions.

Blanket Unloading Ban Opposed

A STORM is brewing, says the T.R.T.A., over the issue of whether local highway authorities should be given dictatorship powers to impose at will loading and unloading bans on commercial vehicles. The Association refers to a new clause in the Road Traffic and Roads Improvement Bill adopted in the House of Lords last week. Exchanges on the matter are taking place with the Ministry of Transport. The effect of the clause, put forward by Lord Lucas of Chilworth, is to empower councils to prohibit loading and unloading over any section of their area—or, indeed, over their entire territory—for any period they wish. Such a period could be extended to cover 24 hours a day throughout the week. If it becomes law it will nullify a section of the 1960 Road Traffic Act which gives permission to local authorities to introduce lengthy bans only on condition that reasonable access for vehicles is maintained. This "reasonable access" safeguard is removed by the present clause, says the T.R.T.A.

Mr. H. R. Featherstone, national secretary, says that the vast majority of local authorities are sensible enough to take a reasonable attitude, but experience suggests that with the best of intentions there might be a minority using these very wide powers to create havoc. There is also the risk that with the ever-increasing rise in the volume of traffic any local authority, equipped with such powers, might be tempted to stop loading and unloading on the ground that it might help matters. The trouble in contesting this issue is the existence of what could be termed a psychological barrier. The public, and those who help to mould public opinion, think of the commercial vehicle in relation to road traffic as an enemy. Public opinion is only very slowly awakening to the fact that the lorry is at least as important as the bus and simply must be given some degree of priority. Anyone who has to examine more closely the role of the commercial vehicle quickly appreciates that "traffic" and "transport" are two different matters and that no "traffic" solution is practical unless it takes into account "transport" needs.

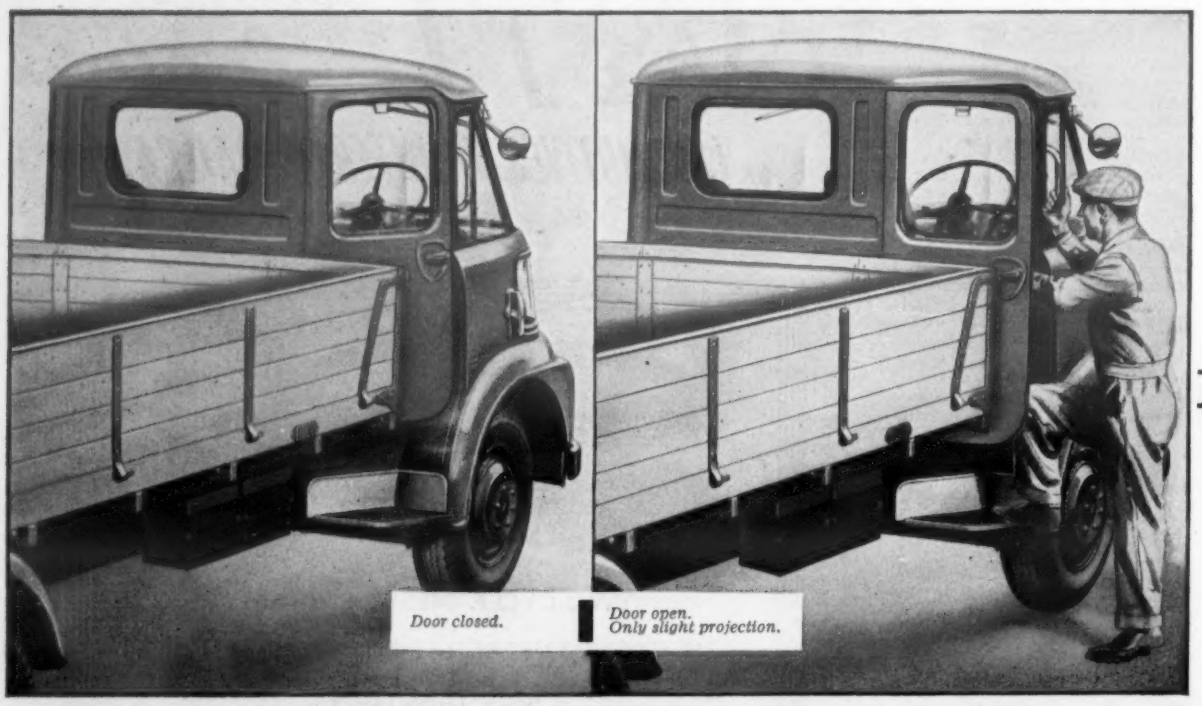
Bus and Coach Developments

R. Blackhurst (Blackpool), Limited, applies to incorporate with its own group of excursions and tours those of J. F. Elsworth and Sons, Limited.

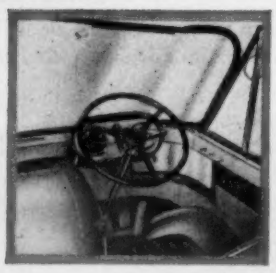
Wolverhampton Corporation is seeking powers to operate outside the borough boundary along Bridgnorth Road and Heathmill Road, Wombourne.

Maidstone and District Motor Services, Limited, has extended the London—Rye express service (E10) which it took over originally from the Weald of Kent Transport Co., Limited, to Camber (Lydd Road) in summer months.

From July 20 short workings from Guildford to Burpham (Sutton Hill) on London Transport Country Bus routes 415 and 436 will make a terminal loop from London Road via New Inn Lane, Glendale Drive and Winter Hill Way back to London Road.



... easy access



... all-round vision

... corner lights

12 MONTHS' WARRANTY backed by B.M.C. —the most comprehensive Service in Europe.

MORRIS

ANGLE-PLANNING gives you SAFETY DOOR OPENING

A new concept of safety for your fleet drivers! Rear hinged doors which project only an inch or two beyond vehicle line when fully open. Traffic can pass safely . . . no interference with pedestrians. And—so easy is access—there's a tremendous saving in time and effort needed on multi-call deliveries. Extra safety, too, in the all-round vision with floor windows, making manoeuvring simpler, safer, saving time on turn-round. And—further time saver—a low-load platform to speed goods handling. With driver efficiency features such as four-way seat adjustment, twin link-driven wipers, twin exterior mirrors, practical lighting control, direct view instrument panel, servo braking.
Plus choice of diesel or petrol engines for economical power. So much that's new . . . and new low prices, too. Get full information from your Morris dealer.

All this—and lower prices too!

Catalogue on request. Please mention capacity that interests you.

you're **loads** better off with

MORRIS angle-planned vehicles

1½, 2, 3 & 4 TONNERS

MORRIS COMMERCIAL CARS LTD., ADDERLEY PARK, BIRMINGHAM 8. Overseas Business: Nuffield Exports Ltd., Oxford and 41-46 Piccadilly, W.1.

M.C.48

MODERN AIRWAYS and COMMERCIAL AVIATION SECTION

BRITANNIAS IN OPERATION

Manufacturer Reports Reliability

DURING 1959 the 32 aircraft which comprise the Britannia fleet of the British Overseas Airways Corporation were responsible for 56 per cent of the total revenue hours flown by the corporation—a substantial and significant contribution to the airline's total revenue-earning capacity. An outstanding feature of these operations is the high degree of reliability being achieved by the fleet. Recently, for example, 93 per cent of all scheduled departures by Britannia 102s have been free of engineering delays—a figure which compares very favourably with those for other aircraft in corporation service and is considered particularly encouraging in view of the fact that Britannias have been used regularly on the Commonwealth routes, some of the most arduous in the world.

A feature of recent operations by the Series 102 aircraft has been a number of charter flights, among them a series of 16 carrying European emigrants. Excellent reliability has been achieved on these operations, too—the March figures, for instance, show that 95 per cent of all revenue departures, charter and scheduled, were free from engineering delays. Britannia 102s are now operating again on some Asian services as a temporary measure because of the pressure on the Comet 4s, and they are also engaged in the carriage of Atlantic tourist traffic.

The larger Britannia 312s are very busy on the Atlantic and Pacific routes and, like the Series 102 aircraft, are achieving a punctuality rate comparable with that of any other B.O.A.C. aircraft. These reliability figures are stated to be well matched by those achieved by other Britannia operators. Bristol Aircraft's service department at Filton keeps close watch on system and unit reliability as it affects Britannia punctuality so that steps can be taken to improve reliability.

A Rising Percentage

Analysis of the hours flown on revenue or logistic operations by B.O.A.C., Canadian Pacific Airlines, Cubana, El Al, Aeronaves de Mexico, Transcontinental SA, British United Airways (formerly Air Charter and Hunting-Clan), Eagle Airways and R.A.F. Transport Command reveals that the percentage of departures free from engineering delays has been steadily rising. The 1959 average was 89.7 per cent and in the first five months of this year the record was: January, 90.2 per cent; February, 92.9 per cent; March, 93.3 per cent; April, 93 per cent; May, 93 per cent. Not one commercial operator, whether engaged on scheduled services or on charter work, has achieved less than 90 per cent of departures free from engineering delays in the past three months.

Britannias are now making roughly 3,000 revenue departures and flying some 14,500 revenue or mission hours every month, and these figures are rising as summer schedules come into force. One of the busiest centres of Britannia activity is New York International Airport, where B.O.A.C., El Al, Cubana, Aeronaves and Transcontinental aircraft can frequently be seen together. On average there are 7.5 Britannia departures each day from Idlewild—and Bristol suggests that while this may be small perhaps in relation to the airport's total daily movements, it does represent more than has ever been regularly achieved at Idlewild by an aircraft built outside the U.S.A.

More Routes

An increasing number of cities is being served by Britannias. El Al fly to numerous points in Europe as well as to New York, while Cubana aircraft also operate to Mexico City and Madrid. Transcontinental's Buenos Aires-based machines are to serve Santiago as an extension of the airline's New York—Buenos Aires route and Canadian Pacific Airlines, which has had Britannias operating to Amsterdam, Hong Kong and Honolulu for some time, have for the last 12 months been operating a daily service across Canada from Vancouver to Montreal, via Winnipeg and Toronto. More recently they have been flying to Mexico City and from there through Toronto and Montreal to Lisbon and Rome, while on May 7 C.P.A.'s South American service was extended through Lima and Santiago to Buenos Aires.

The independent companies operating Britannias—British United Airways and, more recently, Eagle Airways—are making full use of the considerably increased payload-range capacity conferred by the aircraft. Their Britannias are frequently to be seen at such points as Nicosia, Aden, Nairobi, Singapore, Hong Kong and Christmas Island, in the last case often in the course of global charter flights. R.A.F. Transport Command's payload-range capacity has also been substantially increased as deliveries of Britannias have built up. Up to the end of May, Britannias had flown roughly 330,000 hr. (approximately 229,000 hr. with B.O.A.C. alone).

Success of British Landing Aid

ACCEPTANCE BY FEDERAL AVIATION AGENCY

AS a result of trials in the United States of the British Visual Glide Path Indicator system, the U.S. Federal Aviation Agency is considering adopting it for some of its aerodromes. This new landing aid for pilots was installed at London and Belfast Airports last year and has proved so successful that it is to be installed at several other aerodromes in Britain, beginning this autumn.

There has been continuous co-operation between the United States and Britain in the aviation lighting field, and trials of the V.G.P.I. system have recently taken place at the U.S. Experimental Centre, near Atlantic City. Four other visual guidance systems were included in these trials, and the success of the British equipment should make easier a still wider adoption of what is recognised as a valuable aid to making accurate approaches and reducing the risk of aircraft undershooting.

The V.G.P.I. system was developed by the Royal Aircraft Establishment and subjected to thorough trials at Farnborough and the Blind Landing Experimental Unit, Bedford, before installation at London Airport. This development, which is also a good example of close co-operation between a Government department and an industrial company, started with the pioneering work of Mr. E. S. Calvert and his department at Farnborough. For modern aircraft the glide path has to be defined very accurately to avoid undershoot or overshoot. The existing cross-bar approach lighting system as used at London Airport and many other airfields, which revolutionised approach lighting and greatly improved standards of safety, still lacked glide-path information and some years ago Mr. J. W. Sparke, a member of the R.A.E. staff, proposed a new visual glide path indicator.

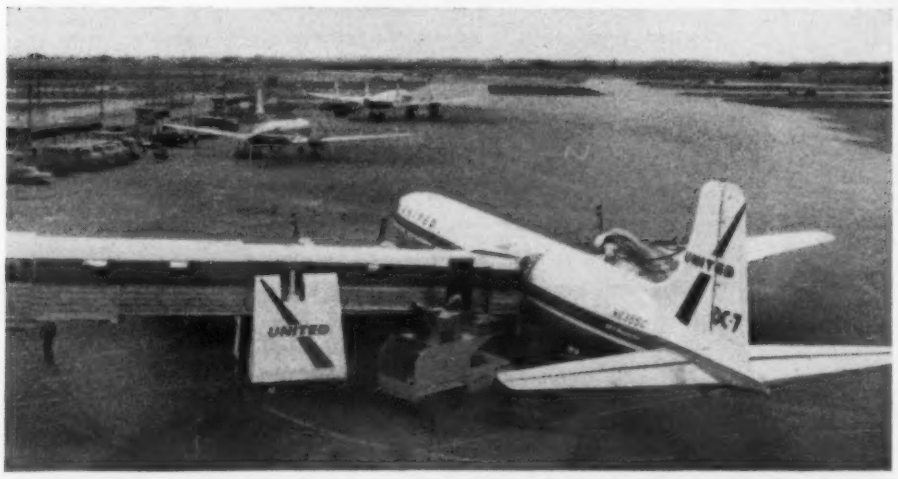
Features of System

After the development work and extensive trials followed at Farnborough and Bedford and the London Airport installation, Thorn Electrical Industries, Limited, was granted a licence under the Sparke patent to manufacture and sell this device and a further period of development followed culminating in a joint design developed by that company with the R.A.E. staff, which was suitable for installation and maintenance on any airfield in the world, and which was operational in rain, snow and sandstorms. Modern aircraft require an extremely accurate glide path of about 3 deg. so that permissible error is very small. The V.G.P.I. system defines a nearly parallel path at the correct angle from some miles out right down to the runway. There are two bars of lamp units on each side of the runway, the first 500 ft. from the threshold and the second pair of bars 500 ft. farther on. If the aircraft is on the correct glide path the front set shows white and the back set shows red. If the aircraft is low they both show red and if it is high they both show white. The transition from one colour to another is sharply defined with a narrow transition region where a mixture of the two lights is apparent.

Many Advantages

The advantages include the fact that pilot interpretation is immediate, simple and unambiguous without any special effort of visual concentration, while the indicator units can be given a light intensity to suit all normal operating conditions. The indications are not impaired by rain on the windscreen and by using two wingbars spaced along the runway a safe approach channel is indicated, the height tolerance of which remains substantially the same throughout the approach, and the indications given do not, therefore, become oversensitive at close range or too insensitive at long range. The gradual change from white to red helps the pilot in the adjustment of his rate of descent when approaching the correct glide path.

Early American trials of the V.G.P.I. system had been inconclusive due in part to misunderstandings of what was required by the optical system, and the success of the recent trials is very largely due to the careful work put in by both R.A.E. and T.E.I. staff on the present design which has the full approval of the R.A.E. staff. In planning them the F.A.A. placed orders with T.E.I. for a complete set of the units and an engineer from T.E.I. went to Atlantic City to advise on the installation. Subsequently R.A.E. engineers went to Atlantic City during the trials to advise on operational experience and requirements. Inquiries for the system have come from many countries.



Among methods adopted by airlines for embarking and disembarking passengers under cover is this extending bridge of United Air Lines at O'Hare Airport, Chicago

Can you spot magnesium . . .

. . . on the Wessex?

No, not on a normal service aircraft, but if the magnesium alloy parts of the fuselage were painted white you would see a picture like the one above. The Westland family, Whirlwind, Widgeon and Wessex, all take advantage of a combination of aluminium and magnesium alloys for maximum strength with extreme lightness.

Pioneers in light alloys

Birmetals

BIRMETALS LIMITED · WOODGATE WORKS · BIRMINGHAM 32

BM164

Dual-purpose

ALL-TRACTION

For all-round fitment, giving better performance and cutting costs in on-and-off-the-road hauling. Deeper tread gives longer non-skid mileage. Tough, rugged shoulder bars give extra traction *off* the road and continuous centre ribs ensure long even wear *on* the road. Tension-Dried Gum-Dipped cord for super-strength body.

Firestone

Best on the road . . . and off

Dual-purpose

SUPER MILEAGE LUG

For rear wheel fitment. Outpulls and outlasts any tyre of its kind. Specially designed dual-purpose non-directional traction tyre for use where off-the-road service is frequent and severe. Power Bite Traction design, with cross grooves, heavy shoulder lugs and circumferential ribbing, gives maximum pulling-power and performance. Tension-Dried Gum-Dipped cord for super-strength body.

EXPERIENCE COUNTS

45 Factories throughout the world.
Firestone total sales exceed £1,000,000 per day.

Completed—
a million and a quarter miles between them...

—and still no sign of an overhaul

In 1956 Warrington Corporation stripped down one of their Leyland Titan engines when it had completed 300,000 miles without even the head having been removed. It showed so little signs of wear that a directive was then issued: **"The mileage of Leyland Titans can be extended to well over 300,000 miles before overhaul."** Today, three of Warrington's other Titans, now 11 years old, have totalled 1,262,155 miles with no engine maintenance other than normal injector and lubrication service. And, as they are still going strong—on an average fuel consumption of 9.39 m.p.g.—Warrington are still unable to put a maximum to the Titan's mileage before overhaul.
Neither can we—and we build them. But we do know what others have done, and it's our guess that those Titans have quite a way to go yet.

Leyland TITAN
for a lifetime of reliability

LEYLAND MOTORS LTD., LEYLAND, LANCS.
Sales Division: Hanover House, Hanover Square, London W.1 Telephone: MAYfair 8561

BOOK NOTICES

The Chatham Line

THE LOCOMOTIVES OF THE LONDON, CHATHAM AND DOVER RAILWAY. By D. L. Bradley. (The Railway Correspondence and Travel Society—Mr. T. J. Edgington, Hon. Publications Officer—57 Heathfield Road, Kings Heath, Birmingham, 14. Price 13s. 6d.) Perhaps in deference to the aspirations of its directors, London, Chatham and Dover Railway engines 1 and 2 were named *Brigand* and *Corsair*. A third was named *Enigma* because the Irish C.M.E. claimed he was kept so short of funds that it was an enigma how it ever got built! Whether *Gorilla* and *Flirt* ever got together in double harness is not recorded, but at least nobody could infer much from such wildly improbable characters as *Huz* and *Buz*. The fact is, that even in the minor matter of engine names, the Chatham hardly conformed to accepted standards, and one is not surprised to learn that in this respect the history of its motive power was no exception to the rule. Although the number of engines owned by the company never exceeded the modest total of 215, the process of rebuilding which began as a matter of necessity and ultimately became a matter of policy, resulted in the type of fascinating and complex development that only historians are qualified to unravel. The present volume issued by the Railway Correspondence and Travel Society is the first of three, which when completed will give a complete history of the South Eastern and Chatham locomotives down to the present time. It deals specifically with the locomotives owned by the London, Chatham and Dover Railway down to the formation of the joint Managing Committee on January 1, 1899, and is by far the most exhaustive treatise ever published on this subject. From the outset in 1858 every type of locomotive has been dealt with class by class, and wherever the engines survived the period under review, the fullest detail of their subsequent history is given. Apart from the text, some 86 illustrations provide a remarkable record of all the types of engine that were placed in service, together with many of the rebuildings and subsequent modifications. The maps are, unfortunately, not of the same high standard; one would look in such a work as this for dated route maps and, in view of the sponsor's interests, for shed locations. Perhaps the most pleasing and valuable feature of this work is that it gives a complete account of the duties on which each class of engine was employed throughout its working life. Potential readers may also be interested to know that in all cases the dates of construction, conversion, rebuilding, reboilering and withdrawal have been taken from the locomotive register of the London, Chatham and Dover Railway which covered the life history of every locomotive owned by the company from 1863 to 1909. For the later period use has been made of the very complete records kept by Ashford Works. The author also raises the very interesting question as to what extent Chatham locomotive practice influenced Ashford after the fusion, and is able to show beyond a doubt that the wind of change that blew through Ashford from 1900 onwards did in fact largely emanate from Longhedge. The new designs that came out under the Wainwright régime were certainly very much akin to Kirtley practice and were to a great extent the work of Robert Surtees, who had been in charge of the drawing office at Longhedge under Kirtley, and was afterwards transferred with his staff to Ashford. In any case it is doubtful if Wainwright, who was firstly a carriage and wagon man, could have devoted himself mainly to locomotive design, as at that time he was responsible for the reorganisation of Ashford Works—a task that occupied him until 1912.

* * *

PATTERN OF POWER. (London: Central Electricity Generating Board, Winsley Street, W.1. Gratis.) Britain possesses the largest integrated electricity supply system in the world and how the system was developed, with the centralisation of control of hundreds of generating stations throughout the country, is described in this newly issued booklet. Reasons for the grid and super-grid are advanced—it is pointed out that while even bulk electrical transmission cannot compete in cost with the transport of coal mainly by sea, it is in fact cheaper to transmit electricity than to carry coal by other means over distances from 40 to 120 miles—and an explanation is given of the way in which central and regional control ensures that the demands of the moment are met by the most efficient generating stations. The complex procedure necessary for building grid lines is indicated and the relative economics of grid and underground lines are explained.

* * *

THE AUTOCAR HANDBOOK. 22nd edition. By J. R. Singham, Ph.D., B.Sc.(Eng.), A.M.I.Mech.E. (London: For *The Autocar* by Iliffe and Sons, Limited, Dorset House, Stamford Street, S.E.1. Price 12s. 6d. net.) The *Autocar Handbook* has been a recognised lay guide for over 50 years; from time to time it has been necessary to rewrite it completely due to major advances in design and this applies to the present edition, which gives an up-to-date account of the car of today, written in informal easy-to-read style. Many specially drawn three-dimensional and other illustrations play a large part in helping full understanding by even non-technical readers. Car structure and mechanism is described in a logical sequence and among recent developments covered are automatic transmission systems, two-pedal control, disc brakes, overdrives, power-assisted brakes and steering and fuel injection.

* * *

LIVERPOOL CORPORATION—SOME NOTES ON TICKETS AND FARES. By E. G. Broadbent and W. H. Bett (The Ticket and Fare Collection Society: R. J. Durrant, 78 Nightingale Road, Orpington, Kent. Price 1s. 6d., post free). A most interesting study of the fare system together with the tickets employed by an important municipal transport undertaking with an individualistic outlook has been produced in this duplicated pamphlet. It deals with the fare systems, which are of particular interest since two classes were employed at various times on Liverpool trams, the printers, ticket forms, and the means of checking them.

PENNY WISDOM!

The biggest cost of a clutch repair is removing the clutch from the vehicle and putting it back again. When it's out, the repairs themselves are not expensive.
So it's good sense, whenever you have a clutch repair done, to check all three clutch components — release bearing, driven plate and cover assembly. Putting the clutch back with a badly worn part just means another expensive removal a little later. A few pennies spent wisely can save pounds.
Quicker, cheaper clutch repairs have been made possible by Borg & Beck developments . . . including the Exchange Cover Assembly service. Time and money wasting repairs to small, intricate parts are *out*—for a factory rebuilt guaranteed exchange cover assembly is available at a portion of the price of a new one.
With genuine Borg & Beck spare parts — driven plates, release bearings and exchange cover assemblies—clutch repairs are quicker, easier and cheaper. And with these factory-supplied, factory-guaranteed parts you're sure of factory-new clutch performance.

GENUINE BORG & BECK
REGD. TRADE MARK
One of the Automotive Products Group

DRIVEN PLATES, RELEASE BEARINGS
AND EXCHANGE COVER ASSEMBLIES

Free on request, Borg & Beck Trade Application Booklet

SUPPLIED BY: AUTOMOTIVE PRODUCTS COMPANY LTD · LEAMINGTON SPA · EXPORT DIVISION: AUTOMOTIVE HOUSE · GREAT PORTLAND STREET · LONDON W.1

THE CARTER PATERSON STORY

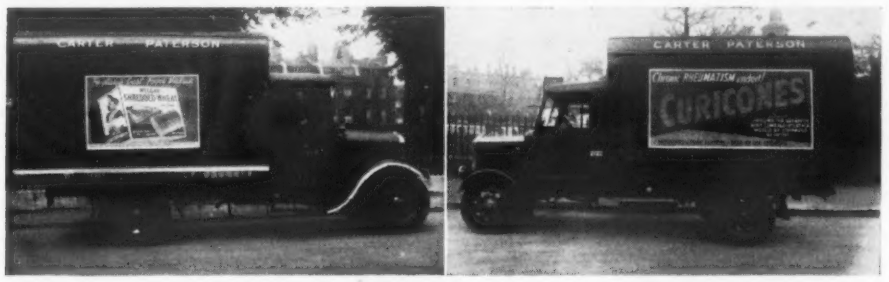
Centenary of a Parcels Service

3—INEVITABLE CO-ORDINATION WITH PICKFORDS*

SOON after the railway agreement a fortified Carter Paterson was associated with two more major commitments, the first of which was designed materially to consolidate its trading position in the Metropolis. This was the acquisition in 1934 of City and Suburban Carriers, Limited, easily its largest rival. City and Suburban had for years been something of a thorn in the side of Carter Paterson by reason of rates competition and now it was used to combat similar competition from other quarters.

City and Suburban Carriers was registered on December 31, 1918, "to act as delivery agent to Herd and Gerner," the latter a railway agent. The founder, and managing director throughout its independent existence, was Llewellyn Barter, who had purchased a City railway agency shortly after the turn of the century. Later he amalgamated with Herd and Gerner as Herd, Gerner and Barter, Limited, which was soon collecting and delivering its own London parcels traffic on a small scale. The railway companies objected strongly to one of their agents competing in this fashion and Barter struck out on his own, initially with two T-type Ford vans. He remained faithful to this make and by 1934 the fleet had grown to 180 vehicles, although at that juncture Dennis 45-cwt. vans were being substituted. Contract hiring formed an increasing part of the business in successive years. The relationship with Herd and Gerner had been maintained from the outset.

After several moves, a depot at Stepney Green was secured in 1925. It was never large enough to accommodate more than a fraction of the parcels fleet (there was a garage at Bethnal Green) and only an ingenious conveyor system, and the use of compact forward-control vehicles helped the company to achieve its rapid expansion. There were no satellite depots, only a City receiving office in Watling Street. The business was predominantly one-way—collection from Central London for City or suburban delivery. Textiles, paper and foodstuffs figured largely and in busy periods 20,000 packages were being handled daily. Under Carter Paterson management the business retained its identity until 1941 when, due to wartime circumstances, it was physically merged and the Stepney Green premises vacated.



Two standard Carter Paterson delivery cars of the thirties: the Thornycroft Bulldog, introduced in 1932, and the Albion CL122 which followed it from 1935 onwards

Association with Sutton and Company

The other move made at this time, actually towards the end of 1935, was the acquisition by the railway companies of a 50 per cent interest in Sutton and Co., Limited, and its subsidiary, Sutton and Co. (Manchester), Limited. The story of the Sutton fortune is fairly common knowledge but the company was confronted with rather different prospects at this time. For years it had an understanding with Carter Paterson that the latter would principally deliver London drapery while Sutton dispatched the provincial traffic which was its staple business. It had secured an arrangement whereby the London drapery houses were obliged to use its packed parcels service by rail to the country and it charged a 2d. booking fee on every consignment collected or brought in.

By 1935 the fortunes of the company were at a rather low ebb which could fairly be attributed to a lack of forward thinking. Mr. James Paterson, managing director of our company, thought that Sutton should and could be revitalised in part by an association with Carter Paterson. Provincial traffic would be co-ordinated, e.g. Sutton might use C.P. road trunk services in suitable instances and vice versa. On the new Sutton board James Barnes Collin retained the chairmanship. The hoped-for schemes never proved attainable and by the time that control was secured of the company, at nationalisation, the picture had completely changed.

Co-ordination Period

The intervening years to 1939 were marked by an increasing interchange of traffic between Carter Paterson and Pickfords operating in partnership. For example, as early as 1936 a joint depot had been constructed in Leicester, which was a fringe area for operating purposes. The two companies still operated here in isolation (there was in fact a wall between them) but exchange of traffic did take place. Further progress in these directions was held up by the outbreak of war, but in 1944 a considerable degree of co-ordination was achieved both in London and elsewhere and the formation of Carter Paterson and Pickfords Joint Parcels Services on January 1, 1946, was in some measure only formal recognition of a fait accompli, although much necessarily remained to be done. It co-ordinated under centralised management the parcels services of the two major participants and their many subsidiary companies but it did not impinge upon other activities. The joint service accounted for 1,150 vehicles and 300 horses. In its first year 34 million packages were carried, compared with the 21 million carried by Carter Paterson in 1931; last year (1959), B.R.S. (Parcels), Limited, carried 104 million.

In the 1920s, Carter Paterson rationalised its depot system; now it was time to rationalise collections and deliveries on the streets. The possibility of nationalisation had assumed greater proportions; it seemed right that the co-ordination which already existed behind the scenes should be made evident. Incidentally, since 1942, Hay's Wharf Cartage Co., Limited, had assumed control of Carter Paterson, reflecting the stringencies of the wartime situation for the latter. In part these had been alleviated by the formation of a "Direct Delivery Service" fleet of some 200 vehicles, most of them of wartime specification, in fact a general haulage department and thus something of a novelty for Carter Paterson.

The war years and immediately after saw a very large development of the shipping and forwarding, packing and allied business. As early as 1935 the business of Mr. R. G. England, also in Goswell Road, was acquired, with a great variety of interests and shortly after it assumed responsibility for the C.P. shipping department. Harman and Wilkes and the very old-established Perrott and Perrott were added in 1941 and 1942. With other additions, this department by the end of the war was renamed Englands and Perrotts and opened up in Liverpool and Glasgow. In January, 1946, Carter Paterson acquired Hernu, Peron and Stockwell, Limited, also a shipping and forwarding agent. Both companies were transferred to the shipping and forwarding group of Thos. Cook and Son, Limited, on nationalisation, but the vehicles for Englands and Perrotts continue to be supplied by B.R.S.

Rolling Stock

No history of a transport undertaking is complete without some reference to its rolling stock and no survey of Carter Paterson vehicles can omit an initial reference to the horse. Like most large horse owners the company and its carmen took immense pride in their animals. By the end of its career the horse van had become a lightweight body running on pneumatic tyres and ball-bearing hubs. In fact, as late as the commencement of the 1930s there was talk of adding horses instead of the more expensive motor for short distances.

The first motor was a two-cylinder 6-h.p. Daimler in 1896. It had an untimely end and it was not until 1902 that mechanical power in the shape of Straker steam wagons reappeared. They took over the depot transfer journeys and hauled converted carts as trailers. Petrol was tried again in 1906; early makes represented were Lacre, Napier, De Dion Bouton, James and Browne, Belhaven, Dennis and Tilling-Stevens. Shortly after this, trials for a larger type of vehicle resulted in the purchase of 60 Leyland X-type 35-h.p. 3-tonners in 1908 onwards. Half were commandeered for the war. This type of vehicle gave an extremely good account of itself, one unit amassing 380,000 miles before it was withdrawn in 1932. The Thornycroft T4 lorry was also used with, after the war, the ubiquitous Leyland R.A.F. G-type for transfer work, the W. and G. and Albion.

The last-named make was always represented in force in the Carter Paterson fleet but shortly after the war it was thought that the battery-electric held out strong hopes as a delivery vehicle and directors of the company were interested in the General Vehicle Co., Limited, which was formed in 1914 to manufacture electrics of American origin in Birmingham. Quite a number of these G.V. vans were added in the 1920s, culminating in 1933 in a model which had bodywork in common with the Commer Pug 2-ton petrol-engined van.

An Advanced Vehicle

The prototype Commer Pug was in fact constructed by Carter Paterson from electric vehicle components where suitable. With its centrally positioned engine beneath the body, readily removable for overhaul, cab only 18 in. from the ground

(*Continued on page* 12)

One of the postwar Austin 2-tonners in Joint Parcels Services livery and (right) car body hoist at Macclesfield Road

* No. 2 appeared June 25.

Motoring-is-such-a-very-frightening-business

There are lots of different kinds of driver on the road. A good many different kinds of fuel too. The safest thing to do is to stick to BP Diesel—available at Agency sites throughout Britain. With a Diesel Agency card issued by Shell-Mex and B.P. Ltd your drivers can fill up with BP Diesel on credit, or cash at agency rates.

BP DIESEL

PETROL AGENCY DERV

THIS IS THE SIGN THEY SHOULD LOOK FOR

Is there really a bus in that box?

Surprisingly enough Charles is right. Every day Metsec lightweight all-metal framings flow from British ports to all corners of the world.

Designed to individual requirements, they are fully fabricated and ready for speedy assembly and finishing by unskilled labour.

Have you had your copy of our brochure "Bus in a Box"?

METAL SECTIONS LTD

OLDBURY · BIRMINGHAM · Telephone: BROadwell 1541

PLEASE SEND "BUS IN A BOX" CATALOGUE
TBMT

NAME.....

POSITION.....

COMPANY ADDRESS.....

.....

.....

DESIGNING

AND MAKING
TRACTION EQUIPMENT

You, as an engineer, know that there can be no sharp dividing line between designing and building. A good design incorporates experience gained in making, testing and commissioning similar equipment in the past. And, of course, it is also shaped by the experience of all sorts of people using the earlier designs under a variety of conditions that could not be simulated in any test laboratory.

To a long-established company such as Crompton Parkinson this process of feedback of information to the designer is fundamental.

In traction equipment, where space and weight must be kept down, and yet robustness and accessibility are at a premium, it shows up in the simplicity and elegance with which these conflicting demands are reconciled. As for example, by the neat cylindrical frame of the latest trolleybus motor. In the design of these motors we were able to make direct use of the experience we had gained with earlier trolleybus motors as well as more indirectly from hundreds of other equipments built for main line locomotives, shunters and motor coaches.

Crompton Parkinson LIMITED
TRACTION EQUIPMENT

Traction Division, Chelmsford, Essex.
Telephone: Chelmsford 3161.
Telegrams & Cables: Crompark Chelmsford.

Makers of Electric Motors of all kinds, A.C. and D.C. Generators, Switchgear, B.E.T. Transformers, Cables, Instruments, Lamps, Lighting Equipment, Batteries, Stud Welding Equipment, Traction Equipment, Ceiling Fans.

NEWS FROM ALL QUARTERS

Israel Railway Accelerations

With the introduction of its summer timetables Israel Railways has speeded up some trains. On the Jerusalem—Haifa line, for example, the two trains in each direction make only three stops instead of 11, and the journey time is reduced by 16 min. to 3 hr. 9 min.

I.C.C. in Intrastate Proceedings

Early last month the Interstate Commerce Commission made history by authorising the Missouri Pacific Railroad to discontinue two intrastate passenger trains. The I.C.C. overruled the Kansas Corporation Commission plea that a federal authority had no jurisdiction over this aspect of intrastate commerce.

Dangerous Chemical Traffic on Ferry

British Railways is now sending six-ton tanks of vinyl acetate between Hull and Coleraine, via its Heysham—Belfast container ferry service. As the tanks are lifted from rail wagon on board ship and vice versa firemen stand by with extinguishers ready to deal with any leak of this highly combustible fluid.

Tunnel Fatalities

One man was killed and another fatally injured on July 6 when part of the roof of the Whiteinch—Linthouse road tunnel under the Clyde collapsed on top of construction workers. About 60 men were working in the tunnel when the accident occurred. It is the first fatal accident since work on the construction of the tunnel was begun three years ago. Excavation work for the second tunnel is to begin shortly.

Double-Deck Car Vans

Fourteen double-deck covered wagons will make their debut on the popular car-sleeper train between Kings Cross and Perth next year. The new two-tier vans will raise the car-carrying capacity of the service from 24 to 42 and the sleeping-berth accommodation on the trains will be stepped up from 104 to 136. The bodywork of the vans will be of reinforced glass fibre and an electric hoist will be fitted to the vehicles to help in the loading and unloading operations. Each transporter will carry up to six cars—four on the upper tier and two on the lower.

Queensferry Bottleneck to Go

A new crossing of the River Dee on the main route from the North of England to the holiday resorts of North Wales should be open to traffic before the end of the 1961 season. The Minister of Transport has authorised a tender for the construction of a new bridge over the River Dee and a 1¾-mile road to by-pass the village of Queensferry. Work will start in August and is expected to be completed in 12 months. The new Queensferry Bridge will cross the River Dee at a point approximately 200 yards upstream of the existing narrow bascule bridge. The River Dee at this point is about 400 ft. wide and the new bridge will cross it in three spans. The existing bridge constitutes one of the worst holiday traffic bottlenecks in Britain, with queues miles long at times.

Closure of C.I.E. Stations

Five halts on the Bray line of C.I.E., reprieved by a legal technicality (they were actually closed for a few days), are to be closed in two months' time. They are Sandymount, Sydney Parade, Booterstown, Salthill and Woodbrook.

More 40 M.P.H. Roads

The Minister of Transport has laid before Parliament an order bringing into operation those parts of the Road Traffic Act, 1956, which enable the 40 m.p.h. speed limit to be substituted for existing 30 m.p.h. limits on suitable lengths of road throughout the country. If Parliament approves the order, those parts of the Act will come into force on August 4.

Holiday Suitcases for Hire

The Western Region of British Railways will now hire out a suitcase for holiday luggage in advance at a cost of 7s. for three weeks, provided the user is travelling from Paddington or Cardiff stations and is going to any station on the Western Region. The charge consists of the luggage-in-advance fee of 5s. 6d. for carriage of the suitcase in each direction and a hiring fee of 7s. It covers delivery and subsequent recovery of the empty suitcase.

Express Rail Freight in Europe

The managing committee of the International Railway Union has decided upon the organisation, within the course of the current year, of an express goods train network across Europe on the same principle as the T.E.E. (Trans-Europ-Express) express passenger services. The network, which is to bear the name T.E.E.M. (Trans-Europ-Express-Marchandises), will come into operation in the 1961-62 timetable, it is hoped. Connections will be between main producer and consumer centres in Europe.

Support for Allhallows Branch

In replying to a recent adjournment debate in the House of Commons on the proposal to withdraw the Gravesend—Allhallows train service of the Southern Region, the Joint Parliamentary Secretary to the Ministry of Transport, Mr. John Hay, disclosed that the South Eastern Area Transport Users Consultative Committee had recommended that the line be kept open on the grounds that the economic justification for the proposals did not outweigh the hardship that would be caused by closing it.

Self-Powered Crossing Gates

An experiment with the use of electrically powered rubber-tyred wheels for level-crossing gates has started at Bootham Junction, York. A small wheel is mounted on the toe of each gate and driven from an electric motor immediately above it. The signalman switches this on and off from his box. The new device represents a great reduction in installation and maintenance costs as the old type of drive needed ducts under the roadway which were particularly vulnerable to the effect of heavy traffic. All the electrical equipment is now readily accessible above ground.

CRAVEN-DIESEL

Torque Converter Rail-Cars
with Rolls-Royce Engines

These twin units are part of a fleet of 405 railcars built by Cravens for the British Railways modernisation programme. Each car is fitted with an 8 cylinder 238 B.H.P. Rolls-Royce engine and Twin Disc Torque Convertor.

CRAVENS LTD.
SHEFFIELD

COMMERCIAL AVIATION

Government Support for Air Lines

B.E.A. TRAFFIC STILL GROWS

IT was announced in the House of Commons by the Minister of Aviation on July 11 that the Government had now decided in principle to support financially the development of four types of new British transport aircraft. These were the de Havilland DH121, the Armstrong Whitworth Argosy and the Vickers VC10 and Super VC10. The terms of the necessary contracts were now being worked out with the firms concerned. Mr. Sandys said that he had also examined with the industry various other projects which might in due course merit support and on which it was still too soon to reach final decisions. He hoped to be able to make a further statement on the subject before long and this would include the supersonic air liner in regard to which both aircraft manufacturing groups had made preliminary studies.

Yeadon Successful Despite Loss

The Leeds and Bradford Airport Joint Committee learned at its meeting on July 8 that there was a deficit of £49,883 at Yeadon Airport for the year ended March 31, 1960. It will be shared equally between the two cities. Most of the deficit was stated to be due to extraordinary expenditure which was not likely to recur for a number of years, and the year at the airport was regarded as successful.

Loan for Qantas

Australia has successfully negotiated a loan totalling $30 million to help finance completion of the Qantas Airline programme of re-equipping with Boeing jets, the Federal Treasurer, Mr. Harold Holt, said recently. The Export-Import Bank of Washington would lend Qantas $25,500,000 and the Boeing company would lend the balance of $4,500,000 dollars. Qantas is to buy three Boeings with turbofan (bypass) engines to add to its present fleet of seven, which will also be re-equipped with the new type of engine when it becomes available shortly.

A.A. Sets up New Record

American Airlines in June set a new monthly passenger traffic record for United States airlines by flying approximately 615 million revenue passenger miles, according to an announcement by Mr. G. Marion Sadler, vice-president and general manager. It was the first time that a company has flown more than 600 million revenue passenger miles in a single month. The new figure represented a 12 per cent increase over the 551 million revenue passenger miles flown by the airline in June, 1959. American transported 809,000 passengers during the month, an increase of 7 per cent over the same month a year ago.

New Services Approved

The Minister of Aviation, after considering the recommendations of the Air Transport Advisory Council, has approved the operation of the following air services:

An internal service between London (Gatwick) and Jersey by Dan-Air Services, Limited, from June 18 to September 17, 1960.

An internal service on the route Birmingham—Exeter and/or Newquay by Starways, Limited, between May and October each year from June, 1960, until October 31, 1966.

An internal service on the route London Airport—Exeter and/or Newquay by Starways, Limited, between May and October each year from June, 1960, until October 31, 1966.

An internal service on the route Newcastle and/or Leeds—Newquay by Starways, Limited, between May and October each year from June, 1960 until October 31, 1966.

An internal service between London Airport and Jersey by Eagle Airways, Limited, from July 6 until September 24, 1960.

Transfer from Hunting-Clan Air Services to Transair of inclusive tour services to Munich and Innsbruck and integration into a fortnightly service to Munich until September 11, 1960, and for the period May 27 to September 3, 1961.

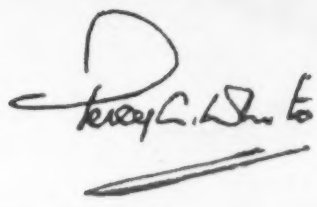
B.E.A. Traffic Growth Continues

In three successive months last summer British European Airways made a profit of £1 million a month. Lord Douglas of Kirtleside, its chairman, recently gave this news in a message to the staff wherein he wrote regarding the current year: "After a 30 per cent increase in April, passenger traffic in May was 18 per cent above the May, 1959, level. . . . Indications are that our rate of traffic increase in June was also in the region of 18 per cent—so we seem to have made a good start to another successful summer." The total B.E.A. profit for the seven-month—April to October—summer season last year was in fact some £5 million, offset by losses in the five winter months of about £3 million. "In the second quarter of the financial year alone we made a profit of over £3,500,000 and, for the first time, we made a profit of a million pounds in each of the three peak months of July, August and September." Despite the continued expansion of B.E.A. traffic in the early months of the new financial year, Lord Douglas states that "at the same time, however, our overall load factor fell . . . for the first time since November, 1958. This was budgeted for and is due to the large increase in capacity which we have been able to offer for sale this year. We have, in fact, planned to operate this summer at load factors a few points lower than the record levels of last year, which were near the limit of what we can achieve without turning away an unacceptable amount of traffic during peak periods."

Activity at British Aerodromes in April

Traffic at United Kingdom aerodromes in April, 1960, was very much higher than in April, 1959. The lateness of Easter this year compared with last year probably contributed significantly to this increase. Air Transport movements numbered 31,046, an increase of 29 per cent compared with April, 1959; the number of passengers handled increased by 43 per cent to 786,642; and freight picked up and set down amounted to 22,861.4 short tons, an increase of 46 per cent. Airports in the London area as a whole showed increases of 20 per cent in air transport movements and 37 per cent in the number of passengers handled. At London Airport there were 10,746 air transport movements, an increase of 19 per cent compared with April, 1959, and 418,884 passengers were handled, an increase of 39 per cent. Passenger traffic was three times as great as in April, 1959, at Southend and Leeds—Bradford, and twice as much at Birmingham and Newcastle. Aerodromes with increases of between 80 per cent and 100 per cent were Gatwick, Isle of Man and Blackpool; those with increases of between 50 per cent and 80 per cent were Edinburgh, Liverpool, Lympne and Portsmouth; and those with increases of between 40 and 50 per cent were Ferryfield, Belfast, Manchester, Prestwick, Cardiff and Bristol. Movements at Channel Islands airports totalled 3,408 (2,920) and the number of passengers handled was more than 10,000 higher at 51,916, the number of transit passengers rising from 3,099 to 4,303. Freight amounted to 470 tons (395 tons).

SOUTHERN REGION TRAFFIC MANAGEMENT



Mr. PERCY A. WHITE, M.Inst.T.

• • • • • •

As already recorded in MODERN TRANSPORT, Mr. Percy Arthur White, who had, since the autumn of 1958, been line traffic manager, South Eastern Division, of the Southern Region of British Railways, has been appointed assistant general manager (traffic) as from June 13, in succession to the late Mr. S. A. Fitch. He joined the former South Eastern and Chatham Railway in 1919 and three years later entered the office of the superintendent of the line. In 1923 he transferred to the Southern Railway timetable department in the then chief operating superintendent's office and was subsequently appointed to the passenger rolling stock department in the same office. Made assistant to the divisional superintendent, London East, in 1938, Mr. White became acting assistant divisional superintendent in 1942 and was transferred to Exeter in the following year to serve in a similar capacity in the Western Division; he was made assistant divisional superintendent there in 1946. His next appointment was in 1947 as assistant to the superintendent of operation and in 1951 he went to Woking as district traffic superintendent. Returning to headquarters in 1956 as assistant operating superintendent (modernisation), his appointment as line traffic manager two years later in the region's new traffic organisation entailed confronting the many problems associated with the closing months of the first phase of the Kent Coast electrification scheme. The success of this is now well known and work is proceeding steadily on the second phase. He is a member of the Institute of Transport, to which he has presented some informative papers, the most recent being on peak hour problems, and is now serving on the committee of the Metropolitan Section.

LONDON INDEPENDENTS

Chairman of P.S.V. Operators

TRIBUTES TO MR. W. F. FRENCH

MANY London independent coach operators were present at a luncheon at the Trocadero Restaurant on Wednesday last week to do honour to Mr. Walter Flexman French on the occasion of his retirement from the chairmanship of P.S.V. Operators, Limited, the independent coach booking organisation. Mr. French, who is managing director of United Service Transport Co., Limited, has held this position since the inception of P.S.V. Operators in 1932. His successor, Mr. F. J. Speight, of George Ewer and Co., Limited, proposing a toast to Mr. French, said in opening that the organisation boasted 600 agents in the Greater London area. (There are 68 operator-members, 55 of them based in the London area). P.S.V. Operators, he said, collected something like £750,000 annually from agents and bad debts were almost unknown. All this was done at a cost so low as to be unbelievable.

They had had only one chairman since 1932, Mr. French, who was now 71, he understood. It was largely his brainchild, without him the organisation could not have been born. His ability had steered P.S.V. Operators through many real difficulties, for example, the resiting of Kings Cross Coach Station after the war. It was true to say that that station would not have continued to exist without Mr. French's efforts, yet his company had no interest in it. Mr. Speight characterised Mr. French as a contradiction in personalities—he was an "absolute master of invective" on the one hand, and on the other had the soft answer that turned away wrath. They were presenting him and his wife with a set of Persian carpet runners.

Fair

First of the speakers to follow, Mr. F. A. Flin delighted the audience with his deft humour. Confessing that he had been out of touch with the industry for eight months owing to ill-health (he is shortly to re-enter hospital), Mr. Flin said that for all he knew Charles Banfield and George Ewer might by now be sworn friends. He had known Walter French for 40 years; he would call him fair, forthright and fearless—fair because he could support causes inimical to his own business interests, forthright because he always called a spade a "—— spade" and fearless because he would pursue unpopular moves if he thought them right. He had been an immense help to them all.

Mr. J. M. Barr endorsed these sentiments. Everybody in the coach business put their own interests first, but of Mr. French it could be said that, like Caesar's wife, he was above suspicion. The theory of Francis Flin and the practice of Walter French together had rid the industry of the defaulting agent. This was the achievement of French because he had the complete honesty to support minority views disinterestedly.

Dangers Averted

Mr. E. A. Lainson recalled that in 1932 there had been complete chaos in the London coaching industry. French and Mr. E. A. Webber (who has just retired from active participation in Empire's Best Coaches) saw the dangers confronting the industry. The independents might not have continued, he thought, without their efforts, in particular the all-year-round independent services. Their businesses had been preserved and enhanced as a result of the efforts of P.S.V. Operators. Mr. Walter French and his brother had gone different ways in the p.s.v. industry but both had proved themselves outstanding.

Replying, Mr. French modestly disclaimed responsibility for the idea of a booking organisation. It had come a year or two earlier than 1932, he said, from a group of people including, besides himself, L. A. Mitchell, of BlueBelle Motors; Alfred Timpson, of A. Timpson and Sons; Frank Monkman, of Orange Luxury Coaches; and G. R. Valli, of Valliant Direct Coaches. They formed the London Coach Owners Federation and were joined by the Ewers. They met at 80 Clapham Road (the offices of BlueBelle) and from this emerged the present organisation, registered in December, 1932. The reason for the movement was that around that time booking agents each year "took them to the cleaners" to the tune of about £3,000 and in those days, it must be remembered, the average cost of a coach was about £700-£800. In other words, it was the equivalent of four coaches. The idea of a common ticket to remove booking malpractices had taken some selling. He paid tribute to the unfailing support in those days from Mr. Flin and from Mr. H. Allen, of Yelloway Motor Services.

★

GOLDEN JUBILEE OF A.P.V.

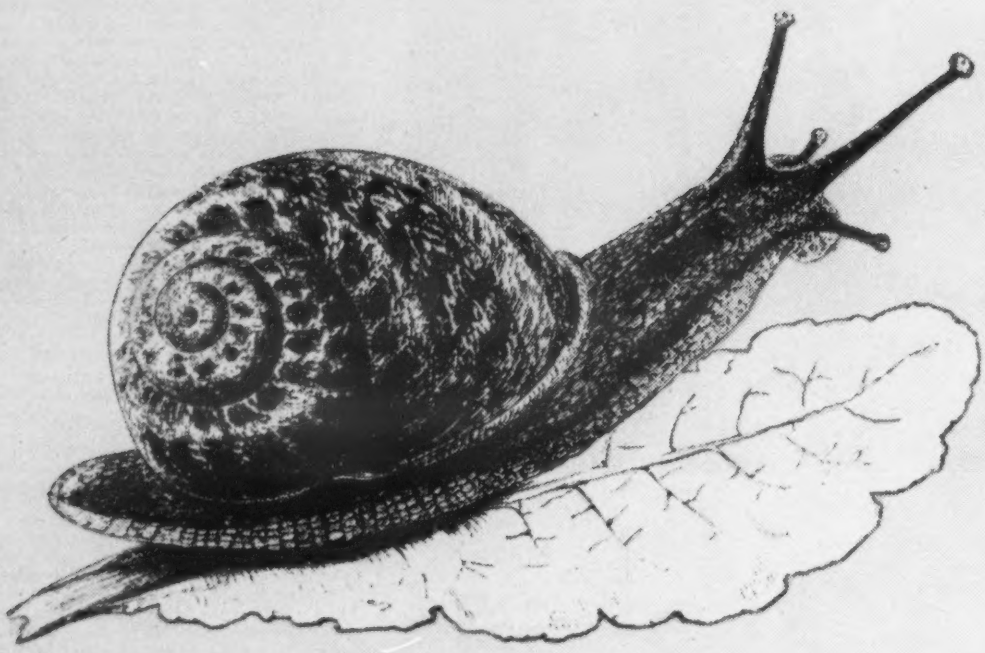
Aluminium Welding Pioneer

PIONEERING work in a particular industrial sphere does not always lead to worthwhile reward, but that cannot be said of the early efforts of Dr. Richard Seligman, who in 1910 started the Aluminium Plant and Vessel Co., Limited, to develop commercially a patent, which he held jointly with a Swiss firm, for the welding of aluminium. It was the first company to produce large vessels in aluminium, the industrial application of which metal had previously been handicapped by the difficulty of welding. Today, the A.P.V. Company employs nearly 2,000 people at its modern factory at Crawley and operates a large overseas organisation based on eight associated companies, four of which have their own factories.

Corrosion Resistant Materials

Success in the production by welding of large aluminium vessels and plant for the brewing, dairy and chemical industries led to the early development of transport tanks in this lightweight material and was followed by similar pioneering work in perfecting the welding of the difficult corrosion resistant metals, such as copper, nickel and stainless steel. The company has continuously specialised in the fabrication of welded plant in these materials and has built up a unique reputation in this field.

The high standards developed by the A.P.V. Company in the techniques of welding are indicated by the fact that the company was called upon to make the aluminium core shells of all but one of the 14 atomic research reactors built in Britain, as well as those for several reactors for use overseas, and one of the two 1,000-ton insulated aluminium storage tanks and all the pipework for the Gas Councils trial methane scheme at Canvey Island. In the field of bulk transport tanks, A.P.V. is at present paying special attention to the development of large-capacity aluminium tankers.



MADE TO MEASURE

The snail, most thoughtfully, goes to some pains to reconcile his own needs with those of the conchologist.

• As home and protection, his shell must be tough, portable, and very much made to measure. At the same time, it must have just those qualities which—in due course—will delight the collector.

• Sheet steel from the City of Steel follows no less closely its intended purpose. Each order is treated as a separate assignment so that you, the manufacturer, get the particular kind of steel your product needs.

• Steel, in fact, made to measure—to your exact requirements.

THE STEEL COMPANY OF WALES LIMITED

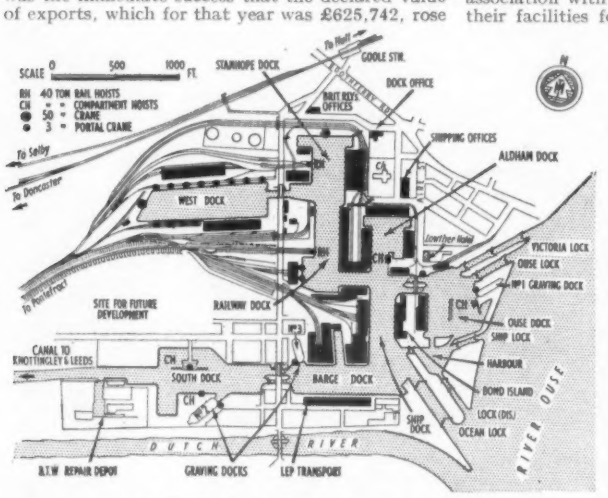
THE PORT OF GOOLE

Origin and Development

WIDELY known as England's most inland port, Goole is no less remarkable as a town and port whose origin and early development was entirely canal inspired. It came into being as a consequence of the difficulty in navigating the upper reaches of the Ouse at a time when the expansion of the woollen trades and the growth of shipping had made it clear that some alternative route would have to be found. The outcome was that in 1820 the Aire and Calder Navigation was empowered to construct the Knottingley to Goole Canal joining the River Ouse near the outfall of the River Don. At that time Goole was no more than an insignificant hamlet to the south of the Dutch River, and but for the coming of the canal would doubtless have so remained.

The Aire and Calder Navigation was quick to appreciate the great potentialities of Goole as its eastern terminal. Navigable from the open sea for vessels of several hundred tons burthen, and some 30 miles nearer the manufacturing centres of the West Riding than Hull, it was an ideal place for transhipment and the establishment of a docks system. On July 20, 1826, the ship and barge docks were declared open and towards the end of the same year the Court of the Exchequer issued a commission constituting Goole a port for foreign trade. This commenced in April, 1828, and such was the immediate success that the declared value of exports, which for that year was £625,742, rose

One of three ex-Lancashire and Yorkshire Pugs employed in the docks at Goole



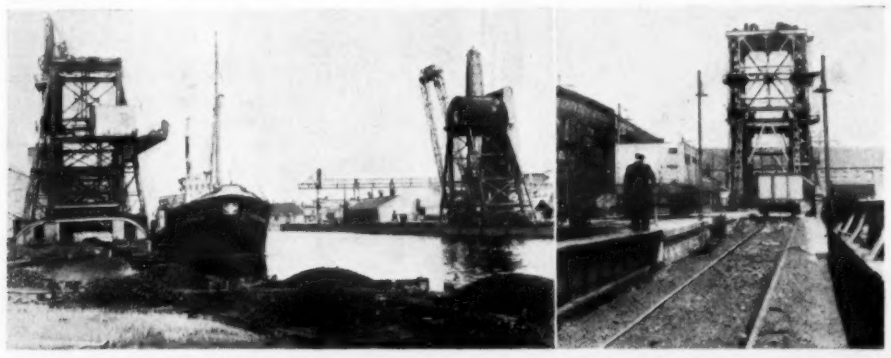
Layout of the B.T.C. docks at Goole

in 1829 to £2,155,828, and it is recorded that in 1830 some 69 vessels with a gross tonnage of 5,200 were registered at the port.

Town Planning

From the outset there was the separate problem of importing labour to work the port, the provision of dwellings, and indeed all the amenities required by a permanent community to be settled on what was virtually a virgin site. With commendable acumen, and doubtless at little cost, the navigation had acquired all the land in the vicinity, so that it was able to develop the town as it thought fit, complete with hotel, church and theatre. Most of this early development is still extant and provides an interesting example of the type of town planning that was afterwards copied closely by the railways. The Lowther Hotel, where the board of the Aire and Calder held many of its meetings, is especially fine, and contains a painted room with one superb mural depicting navigation in the docks at about the time when they were opened.

Writing in 1838, William White, in his *Gazetteer of the West Riding*, described Goole as a handsome modern town with much of the activity that characterises the busy haunts of men. The same author was also perspicacious enough to observe: "It has every prospect of continued and increased prosperity provided it is made to form a link in the great chain of railways by which the east and west oceans, and the north and south parts of the island will soon be connected."



Compartment boat hoists in South Dock; right, a rail wagon hoist with the operator releasing a loaded wagon to the hoist as an empty wagon returns by gravity on the righthand road

Railway Development

It says much for the progressive outlook of the Aire and Calder management, that despite the rivalry that then commonly existed between the two modes of transport, it was quick to throw open the port to railway development. In 1845 the Wakefield, Pontefract and Goole Railway (Lancashire and Yorkshire Railway in 1847) was authorised, and the line was completed in 1848. As built this line skirted the north of Railway Dock and came into a passenger terminal at Aire Street, but in 1891, when the Stanhope Dock was built, the track was resited further to the north with an allowance for the future construction of West Dock.

This early entry into Goole by the Lancashire and Yorkshire gave it a 15-year start over other railways and enabled it to establish a monopoly at the docks. Although the docks remained the property of the Aire and Calder Navigation until nationalisation, their early development and mechanisation owed much to the initiative of the Lancashire and Yorkshire Railway which possessed the largest railway-owned fleet in the country in 1922. By 1913 this railway was exporting half a million tons of coal to the Continent from Goole in its own ships, and by 1922 some 25 of its vessels, mostly around 1,000 g.r.t., were based at the port.

North Eastern Approach

The North Eastern Railway reached Goole on August 2, 1869, by the Staddlethorpe and Thorne line, which joined the M.S. and L. for Doncaster; today its former station handles all the passenger facilities. However, it is interesting to notice that in an official guide and development handbook issued in 1921 specific attention is drawn to the advantage of Goole as the only East Coast port directly associated with the forthcoming Midland group of companies. It goes on to state, "The association with the L.N.W.R. and M.R. with all their facilities for directing traffic will inevitably result in new feeders of traffic via Goole from every portion on their respective systems."

Today, under the administration of the North Eastern Region of British Railways, there is little outward evidence of these past affinities, although to anyone familiar with such matters, the presence of the former Lancashire and Yorkshire Railway's Pug tanks that still shunt in the docks is a constant reminder of a tradition that harks back to 1848.

Port Development

The building of the Ship and Barge Docks in 1826 was followed by the Ouse Dock in 1838, and these three formed the early canal port. With the coming of the railway in 1848 the next dock was built specifically for rail traffic—hence the name Railway Dock. This was followed by the small Aldam Dock in 1881 and the Stanhope Dock 10 years later. Further expansion near the Ouse was then blocked by the old part of the town, and the two latest and largest docks, the South Dock (1910) and the West Dock (1912), were built to the west, the former by enlarging the course already used by the Knottingley and Goole Canal. Out of a total water area of 46 acres these eight commercial docks occupy 38 acres and give access to some three miles of quays. The year 1938 marked what was destined to be the last major improvement at the port by the Aire and Calder Navigation, with the opening of the Ocean Lock by Sir Josiah (later Lord) Stamp, the chairman of the London Midland and Scottish Railway. This lock was 80 ft. wide and 375 ft. long.

The enormous increase in the coal trade that occurred throughout the latter half of the 19th century was especially beneficial to Goole since its geographical position as a port could hardly have been bettered for the export of coal from the numerous collieries that formed the South Yorkshire coalfield. The Aire and Calder Navigation was not slow to exploit this traffic, and its waterways became famous as a result of the system of 40-ton compartment boats that it developed to operate in "trains" of up to 19 which were hauled to Goole. It provided loading by means of compartment hoists, which comprised an apparatus capable of lifting a 40-ton compartment boat clear of the water and tipping its contents into the hold of a ship in a matter of minutes. Four of these hydraulically powered hoists were built and are still in service, two in the South Dock and one each in the Ouse and Aldam Docks.

Although the number of compartment boats has now fallen from about 1,100 to 650 because many of the present-day collieries are no longer adjacent to the waterways, the method of loading is still extremely efficient as it enables an average collier of 1,600 tons capacity to be loaded in a matter of six or seven hours. To supplement these compartment boat hoists and to deal specifically with railway-borne coal there are two rail hoists which, acting on the same principle, raise and tip the loaded coal wagons directly by means of a chute into the ship's hold, and in addition there are three large 50-ton coaling cranes available for heavy lifts. Coal is still the mainstay of the trade and represents about 80 per cent of the total annual tonnage.

Under the Transport Act, 1947, the Aire and Calder Navigation was transferred to the British Transport Commission and in 1950, with the transfer of the railway interests within the dock area, the whole of the B.T.C. docks at Goole were brought under the Docks and Inland Waterways Executive. Following that Executive's abolition in 1953, they now form part of the Commission's Humber Ports organisation.

REGULAR CARGO SERVICES between LONDON and

HAMBURG, BREMEN, RHINE PORTS, HARLINGEN, AMSTERDAM, ROTTERDAM, ANTWERP, GHENT, TERNEUZEN, DUNKIRK, CALAIS, BOULOGNE, TREPORT, DIEPPE, HAVRE, CHARENTE, BORDEAUX.

Coastwise to HULL

also between the following ports LONDON, NEWCASTLE, MIDDLESBROUGH, and SOUTHAMPTON and OPORTO and WEST ITALIAN and SICILIAN PORTS.

BRISTOL CHANNEL PORTS (Bristol, Barry, Cardiff, Newport, Swansea) and HAMBURG, BREMEN.

SOUTHAMPTON and ANTWERP, ROTTERDAM, BREMEN, HAMBURG.

CONTAINERS

DOOR TO DOOR SERVICE OFFERED BETWEEN U.K. AND THE CONTINENT

The GENERAL STEAM NAVIGATION CO. LTD.
Three Quays, Tower Hill, London, E.C.3
Tel.: MINcing Lane 3000

OFFICIAL NOTICE

MANCHESTER EDUCATION COMMITTEE

TENDERS

MANCHESTER Education Committee. Tenders invited for supply and delivery of the undermentioned new diesel driven vehicles:

One 35-cwt. Van
One 35-cwt. D/S Lorry
One 30-seater Bus

Further particulars obtainable from the Chief Education Officer, P.O. Box 480, Manchester, 3. Tenders, stating the time required for delivery, addressed to the Chairman, Education Committee, P.O. Box 480, Manchester 3, to be received in sealed envelopes endorsed "Tender for Motor Vehicles," by July 29.

CLASSIFIED ADVERTISEMENTS

CLASSIFIED ADVERTISEMENTS should be addressed to THE MANAGER, Classified Advertisements, MODERN TRANSPORT, Court, 3-16 Woburn Place, London, W.C.1.

SITUATIONS VACANT

COVENTRY Corporation Transport require CASH CLERKS (male) with clerical training and experience in handling cash. Day work only. Rest days staggered in rotation. Salary £335/£595 with prospects of advancement to £670 according to age/qualifications, plus £26 in certain circumstances. Superannuable. Applications with three references (envelopes endorsed "Cash Clerk") to the General Manager and Engineer, 113/117 Harnall Lane East, Coventry, by July 18, 1960.

CLERK possessing initiative and a desire for steady advancement is required for transport department in London. Previous experience not essential, training will be given. Progressive salary scale. Good conditions of employment. Write giving full particulars and salary required to: Assistant Personnel Manager (MRL), Schweppes, Limited, 1/6 Connaught Place, London, W.2.

SITUATION WANTED

MATHS Graduate, with an interest in transport, requires a position in the transport field. Write Box No. 3830, MODERN TRANSPORT, 3-16 Woburn Place, London, W.C.1.

WESTINGHOUSE

BRAKES
are fitted on the 420 b.h.p. diesel-electric shunters for
NEW ZEALAND

Photos by Courtesy of A.E.I. LIMITED

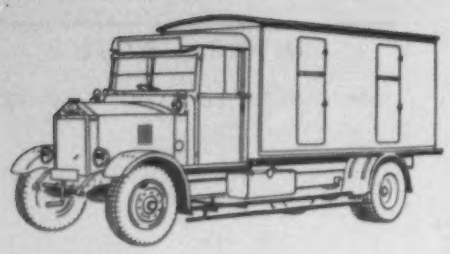
Supplied by Traction Division, Associated Electrical Industries Limited

18 of these double-bogie diesel-electric locomotives are to be used primarily for shunting and light line services in the Auckland area of North Island.

Westinghouse straight and automatic air brake equipment is installed.

The brakes were designed and made in England by:
Westinghouse Brake and Signal Co. Ltd., 82 York Way, London, N.1

Saxby & Farmer (India) Private Ltd., Calcutta Westinghouse Brake (Australasia) Pty., Ltd., Concord West, N.S.W.
Westinghouse Brake & Signal Co. S.A. (Pty.) Ltd., Johannesburg
Agents—Bellamy & Lambie, Johannesburg



A typical example of a 4-ton bonnet type vehicle with box van body manufactured by Albion Motors Ltd. during 1932.

Serving Albion Motors Ltd.

THROUGH THE YEARS

The superb 4-ton 'Claymore' model specifically designed for the distributive trades and for medium distance haulage is fitted with a 70 h.p. 4-cylinder underfloor diesel engine. Albion Motors Ltd. rely on Hardy Spicer propeller shafts and universal joints as with all their vehicles in the long years of the company's history. Through their research and development, Hardy Spicer have more than met the demands imposed by the challenge of increasing strain on transmission equipment.

Product of the
Birfield Group

HARDY SPICER

PROPELLER SHAFTS

HARDY SPICER LIMITED

CHESTER ROAD · ERDINGTON · BIRMINGHAM 24 · Telephone: Erdington 2191 (18 Lines)
Automotive Division of Birfield Industries

The Carter Paterson Story

(Continued from page 7)

and excellent forward visibility, the Pug, like the companion G.V. electric, was a landmark in delivery vehicle design. About 160 Pugs were ordered for the London business, but there were never more than about 50 electrics and the G.V. company was placed in liquidation very shortly afterwards. The first diesel (an Albion) was in service in 1934, less than a year following the departure of the last solid-tyred vehicles.

Later Modernisation

From 1932 onwards the delivery fleet was modernised with Thornycroft and Albion 2-ton units, which replaced older and more sedate

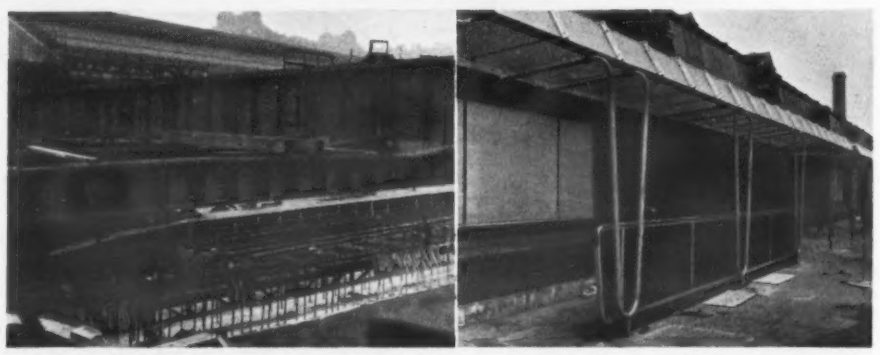
City and Suburban Carriers Dennis 45-cwt. van, one of nearly 100 purchased in 1934-37

Albions and Garners, but shortly before the 1939-45 war some very smart Bedford 2-tonners made their appearance and heralded the change-over to the mass-produced type of vehicle with standard cab, which was to follow after the war.

Throughout the 1930s and much later the special Albion model 50 normal-control 4-tonner, with trailer, was the mainstay for depot transfer.

As early as 1921 the bodybuilding activities of Carter Paterson had been organised as a separate department and recognition of its success in securing outside work came in 1934 with the formation of Express Motor and Body Works, Limited. Until 1938, bodybuilding was carried on at various places; in that year the works were moved to an extensive new building on a prominent site on Great Cambridge Road at Enfield. The Express business was not retained after nationalisation and, like Tersons, now trades quite independently. One final memory of the C.P. vehicles is perhaps worth recalling; around 1935 it was evidently decided to bestow names upon them, events in the year corresponding to the stock number. This pleasant operation was not persevered with, but among the more recondite titles which did emerge were: 1469, *Machiavelli*, 1611, *Gustavus Adolphus*, and 1678, *Habeas Corpus Act*. Courage (or inspiration) seems to have failed in the 1800s.

Strictly speaking, one cannot write "Finis" to this story of the Carter Paterson enterprise because the power to use its title passes to anyone who makes an acceptable bid for the business that is now B.R.S. (Parcels), Limited. This is not the place to speculate on whether it may yet arise, Phoenix-like, from the ashes, or should one say, the melting-pot. It is, however, proper to conclude with a salute to an undertaking which was in its day worthy of the esteem of Londoners and which was as ubiquitous a feature of the London street scene as the red General bus. It engendered immense pride of belonging in its employees, from the highest to the lowest, due in no small measure to the benevolent paternalism of the Paterson family and it formed the basis on which the much larger parcels organisation of British Road Services was built. Let its memorial on this centenary be that to millions "Parcels" still means "Carter Paterson."



Major works at Victoria Station include the reconstruction of Eccleston Bridge. Shown in this photograph is part of the new steelwork crossing the railway tracks and extended platforms at the southern end of the station. The opportunity has been taken by London Transport to erect queue shelters of a new design for the Green Line coach station which will reopen on the bridge upon completion of the work

APN AUTOMOBILE PARTS

Group of typical components, as supplied to the leading motor car manufacturers.

We are specialists in the manufacture of precision and standard fasteners for the Motor Industry

NEWALLOY - Wheel Bolts, Wheel Studs.
NEWALLASTIC - Cylinder Head Studs and Bolts, Connecting Rod Bolts, etc.
NEWALLEX - Induction hardened Spring Shackle Pins and Bolts.

Standard bolts and nuts supplied in "R", "T", and "V" quality, and other Alloy Steels.

A.P.Newall

AND COMPANY LIMITED

POSSILPARK · GLASGOW N.2.

Rapid Transit Plan for Los Angeles

(*Continued from page 3*)

single columns with long-span beams is proposed as being aesthetically pleasing. Daniel Mann Johnson and Mendenhall also recommends a secondary passenger distribution system for the high-density business district to provide important relief to street and pavement congestion. Such a system would connect with the main-line network at downtown stations. As a basis for planning, the firm has projected the use of the Stephens-Adamson Carveyor system operating on an overhead structure. This utilises small eight-passenger cars operating at an average speed of 15 m.p.h., with cars slowing down to pick up or detrain passengers on a semi-continuous basis at each station stop. These would be located at 600-ft. intervals, with traffic channelled either through adjacent buildings or direct on to the pavement. However, the engineers recommend delaying the final selection of the type of operation for this secondary system until the new Metro is in use, when advantage can be taken of later developments in equipment. In particular the firm considers the system now being developed by the Lockheed Aircraft Company as offering some advantages.

To be effective the transit system must be capable of transporting sufficient passengers adequately to fulfil the Los Angeles transit needs in the foreseeable future, estimated at 30,000 passengers per hour per track, and the report suggests that the proposed Metro meets this criterion. However, the four-corridor 74.9-mile system now advocated is regarded as only the initial stage in development of a system for the area. An eight-corridor 150-mile network will be needed within the next two decades to keep pace with the projected growth of the metropolitan area. An advance plan has therefore been produced in outline to cover additional routes to Santa Ana, Inglewood, Pasadena and to San Fernando via Glendale and Burbank. These, as may be seen from the map on page 3, can be regarded as being roughly south-east, south-west, north-east and north-west of the central area respectively.

Rolling Stock

The design envisaged for the Metro cars is based on an overall length of 54 ft. and an unladen weight of about 30,000 lb. The cars would incorporate the most modern features of appearance and equipment and make use of large areas of glass. Seats would be provided for 54 passengers per car and three sets of double doors would be provided on each side, with end doors for emergency use. Cars would be semi-permanently coupled in units of two and operate in multiples of two as required. Dynamic braking would be incorporated, with disc brakes for use at low speeds. Current would be supplied at 600 volts d.c., through a contact rail with a non-earthed negative return.

The proposed design represents an amalgam of conventional train practice combined with bus and airframe techniques. Basically intended for use with pneumatic tyres on concrete tracks, cars would be equipped with auxiliary steel wheels of standard-gauge spacing for use both in shunting and as a safety measure. No such rolling stock at present exists in the United States, but the engineers feel that the rubber-tyred design has ample precedent in the nine years of operation on the Paris Metro. The guide rails are placed inside the running rails in lieu of the outside position adopted in Paris. Consideration was also given to the potentialities of air suspension vehicles. While such vehicles are felt to offer the challenge of speed without wheels, they are not yet far enough developed to be used in a mass transport system. Nevertheless, the concrete tracks could be adapted to such a system if one were found feasible in the future.

Safety

A system of automatic control has been conceived, thoroughly checked and is now recommended. Although no details are available, the engineers claim that this system makes high-speed operation practicable with headways of as little as 60 seconds and positive speed control through curves, switches and other critical points. For the overhead structure, which the engineers stress is not an elevated railway, the design as recommended uses reinforced-concrete construction with a minimum clearance of 14 ft. over streets and 23 ft. over railways.

Stations will be spaced at intervals averaging a mile apart. Three types are envisaged. In the central business district they will have platforms of 448 ft. long to accommodate eight-car trains; elsewhere they will be of 336-ft. length with provision for extension to 448 ft. in the future. All are of island-platform type and incorporate some form of automated fare collection. Where possible stations will be sited to make use of existing M.T.A. bus routes as feeders. Major "park-and-ride" stations are proposed for all lines, and outlying stations would be planned to facilitate the boarding and alighting of passengers from private cars—the so-called "kiss-and-ride" service in which wives drive their husbands to the station in the family car.

Costs

Based on Southern California construction conditions and second quarter of 1960 construction costs, without provision for possible future rises, estimated costs are:

	£
Structures and track	55,607,000
Stations	14,928,000
Electrification	18,535,000
Control and communication	7,357,000
Relocation of public utilities	6,469,000
Yards and shops	2,715,000
Secondary distribution system for downtown	7,429,000
Land acquisition and right-of-way	9,429,000
Rolling stock	27,110,000
10 per cent administration and professional services	14,963,000
15 per cent contingencies	24,680,000
	£189,222,000

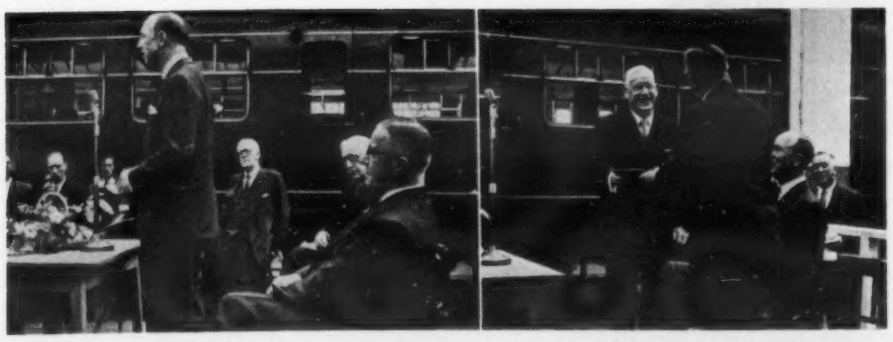
This is the first working plan to be put forward in an attempt to wean the Los Angeles motorist away from his private car. In a city such as Los Angeles, where distance is usually measured in time rather than miles, the peak-hour schedule that can be achieved by a rapid transit system assumes major importance. If the high speeds claimed for the proposed system can indeed be substantiated when the plan is closely scrutinised by L.A.M.T.A. officers, then the second largest city in the United States has a fair chance of getting not just its own rapid transit system, but what may be the most advanced system in the world.

If all goes well—financially—the authority feels that work on the proposed plan could start by mid-1963. According to Daniel Mann Johnson and Mendenhall actual construction would take from four to five years and they strongly recommend that each of the spokes be constructed simultaneously. The Los Angeles Metropolitan Transit Authority, a self-supporting public corporation of the State of California, at present carries only 800,000 passengers a day in 1,480 vehicles over 90 bus, rail and tram routes. However, with close on seven millions living in the authority's area, it will be seen that the potential traffic is tremendous.

Oxygen lancing has superseded drilling in starting holes for internal profiles at the works of Vulcan Foundry, Limited, a member of the English Electric Group. Lance equipment supplied by British Oxygen Gases, Limited, is being used for all internal profiles where the steel is over 2 in. thick. It has contributed substantially towards increasing output; for example, oxygen lancing of 6-in. thick locomotive flywheels is done in the flame cutting shop in a matter of seconds, whereas drilling the holes necessitated removing the metal slabs to another department. Vulcan Foundry has also increased productivity in the fabrication of locomotive parts by the adoption of B.O.G. Bison profile cutting machines, three of which are now in use producing 18,000 ft. of profile cutting a week.

PEOPLE IN PICTURES

Taken at Clowne depot of East Midland Motor Services, Limited, now being reconstructed: left to right, Messrs. G. P. Morris (secretary), F. W. Ingamells (depot superintendent), P. Yorke, R. J. Ellery (chairman), D. G. F. Rawlinson (traffic manager), J. W. Read, J. D. Mundells (chief engineer), F. K. Pointon (general manager), E. R. Williams, W. Brown and A. F. R. Carling



Mr. T. H. Summerson, chairman, North Eastern Area Board, introducing Sir Linton Andrews at the opening of the new Neville Hill motive power depot and, right, Mr. Arthur Dean, assistant general manager, N.E.R., makes the presentation of a memento to Sir Linton

NEW
ZEALAND
chooses
BRITISH
UNITED
TRACTION
engines
for new diesel shunters
New Zealand Government Railways have ordered 44 B.U.T. diesel engines of 210 B.H.P. for their new twin-engined diesel-electric shunting locomotives to be built at Dunedin and Christchurch workshops. The shunting locomotives will operate at marshalling yards in both North and South Islands.
BRITISH UNITED TRACTION LTD
96 Piccadilly, London, W.1. Phone: GROsvenor 7121

THE
HISTORY OF WAGONS-LITS
1875–1955
by
George Behrend, M.A., F.R.G.S.

A new 32-page book, giving an excellent descriptive picture and historical background of this famous international company, covering a period of eighty years and containing 32 illustrations and line-drawings.

Price 3s. 6d.

Order your copy now from your bookseller or direct from the publisher.

Modern Transport Publishing Co. Limited
3–16 Woburn Place, London, W.C.1

IMPORTANT CONTRACTS

Orders for British Air Liners

DURING the first six months of 1960 firm orders have been received for 42 British air liners worth £53 million and for engines for installation in foreign air liners worth more than £3 million—£56 million altogether. Orders from abroad accounted for about half this total. Meanwhile, the "firm order or in service" situation of turbine-powered air liners is encouraging. British aircraft on order or in service now total 682 (42.5 per cent of the total), American aircraft 627 (39 per cent), French 91 (5.7 per cent), Dutch 162 (10 per cent) and Canadian 45 (2.8 per cent). Of the total, 1,607, no fewer than 1,022, or 63½ per cent, have or will have British power plants.

Boeing 720Bs for Avianca

Avianca has placed an order for two Boeing 720B air liners to operate on the New York—Jamaica—Bogota route, cutting the time from 11½ hr. to 6 hr. 10 min. Delivery of the Boeings is scheduled for autumn, 1961, but Avianca is to lease aircraft to operate some jet services on its Europe—Colombia and Colombia—Ecuador—Peru routes from the autumn of this year.

Southern Region Contracts

The Southern Region of British Railways has placed the following contracts:

The Demolition and Construction Co., Limited, London, S.W.1, for construction of five signalboxes and 12 relay rooms for extension of electrification of Kent Coast lines.

George Wimpey and Co., Limited, London, W.6, for construction of four signalboxes and 14 relay rooms for extension of electrification of Kent Coast lines.

W. H. Gaze and Sons, Limited, London, S.W.15, for resurfacing and surface dressing of roads, platforms and footpaths in London (Eastern) district.

R. Corben and Sons, Limited, Maidstone, for new platform buildings and roofing at Chatham Station.

The South Hants Buildings Co., Limited, Southampton, for alterations and repairs at Warminster Station.

Durable Asphalte Co., Limited, London, N.1, for resurfacing and surface dressing of footpaths and platforms in London (Western) district.

Tenth Comet for B.E.A.

British European Airways has ordered yet another de Havilland Comet 4B jet air liner (Rolls-Royce Avon engines), thus increasing its order to 10 aircraft and bringing the total of Series 4 Comets sold to 51. It was just one month since the previous B.E.A. decision to purchase two additional Comets; this is in fact the third repeat order since the corporation first decided in August, 1957, to buy six Comets. The first six B.E.A. Comet 4Bs are now in service and a seventh will be delivered in August. The eighth and ninth aircraft will be delivered in March, 1961, with the 10th following one month later. The popularity of the Comet services is illustrated by figures now available for B.E.A.'s Comet operation from the start of the services on April 1 up to June 26, during which the six aircraft had flown some 2,350 hr. and carried 48,000 passengers over more than 42 million passenger-miles.

Large Australian Order for A.E.C.

A.E.C., Limited, announces receipt of an order for 50 A.E.C. Mandator chassis for Australia, largely for use on interstate haulage services. Large numbers of Mandator goods vehicles are already in operation in Australia; during the past six months sales of A.E.C. (Australia) Pty., Limited, have substantially increased and are now running at more than 50 per cent above 1959 levels.

Large-Capacity Single-Deckers

Among orders for 42 buses received recently by Marshall Motor Bodies, Limited (Marshall-Mulliner Buses), are those for 38 for overseas customers, including one for 20 63-seat double-entrance bodies on Guy Victory single-deck chassis from Lagos Municipal Transport Services. The company completed 18 similar bodies, six of them on Victory chassis, for this operator recently. Of the four buses for domestic operators, two are for Hertfordshire County Council and two for the Atomic Energy Research Establishment, Harwell.

New Diesels for C.I.E.

Contracts have been awarded by Coras Iompair Eireann for 36 diesel-electric and diesel-hydraulic locomotives from American and German firms. General Motors Corporation will supply 15 950-h.p. diesel-electric locomotives, capable of 77 m.p.h. for main-line services; Maybach Motorenbau G.m.b.H. will supply 14 sets of power equipment for 400-h.p. diesel-hydraulic locomotives to be built at the C.I.E. works, Inchicore, for freight and branch-line services; and seven 160-h.p. diesel-hydraulic shunting locomotives have been ordered from Klockner Humboldt Deutz A.G. The new locomotives will bring the total number of C.I.E. diesel units up to 225, including 80 railcars.

SHIPPING AND SHIPBUILDING

P. and O.-Orient Lines in Australia

AMALGAMATION of the P. and O. and Orient Lines worldwide organisation was taken a step further on July 1 with the introduction of a new company in Australia—P. and O.-Orient Lines of Australia Pty., Limited. Arrangements have been made for the P. and O. S.N. company to buy the share capital of its former agent in Australia, Macdonald Hamilton and Co. Pty., Limited, and the management and staff of that company hitherto engaged on P. and O. group business together with the Australian management and staff of the Orient company will become the management and staff of the new organisation.

Maryport to Close

HARBOUR commissioners at Maryport have signified their intention to close the port in the very near future. This is because of trade recession, inability to meet maintenance costs and the extra dredging necessary to maintain the channel.

Four Ferries on Skye Service

THE new car-and-passenger ferry *Kyleakin* left the Clyde on July 11 to go into service between Kyle of Lochalsh and Kyleakin. The new vessel, which can carry six cars, has been built by the Ailsa Shipbuilding Co., Limited, Troon, and has two Gleniffer diesel engines. With the ferries *Portree*, *Broadford* and *Lochalsh* already in service, the *Kyleakin* brings the total fleet on this route to four. The addition of this new vessel should cut the waiting time for motorists at the height of the summer season.

Tilbury-Gravesend Diesel Ferries

IT was announced last week by the Eastern Region of British Railways that it is to replace the three steam ferries on the Tilbury—Gravesend crossing—the *Rose*, *Catherine* and *Edith*—by the end of the year. The new vessels will each be 110 ft. long with accommodation for nearly 500 passengers on the main deck and in the two lounges below. They will be diesel powered and without the conventional funnels. To speed the embarking and disembarking of passengers, the new ferries will have three mechanically operated gangways on each side.

Each gangway is a hinged folding type, hydraulically operated and controlled from the bridge. The navigational equipment includes radar and v.h.f. radio. The new ferries are being built by Whites Shipyard (Southampton), Limited, to a preliminary design prepared by the shipping and international services department, British Transport Commission, in conjunction with the Eastern Region Continental traffic and shipping department.

View of New Port Facilities

IN evidence on the 10th day of the public inquiry into the proposed B.T.C. dock charges scheme at Hull and other East Coast fishing ports, Sir Robert Letch, chairman of British Transport Docks, said it was not true that improved dock facilities at Hull would attract more trade. He explained this by saying that merchants and shipowners used a port for reasons of international marketing. The fact that it had new cranes would not bring new ships or trade into that port.

Giant Tanker Launched in Japan

THE 106,400 deadweight-ton oil tanker *Universe Daphne*, claimed to be the largest vessel afloat in the world, was launched on July 5 by National Bulk Carriers, Incorporated, at the Kure shipyard in Japan. The ship, which cost more than $13 million, will be completed this year for crude oil transport from the Persian Gulf to Japan under a charter contract with Gulf Oil and Idemitsu Kosan Oil Company of Japan. She is owned by the Universe Tankship Company of Liberia, an affiliate of National Bulk Carriers, an American company, which leases the Japanese yard.

Israel Tonnage

MANAGING director of the Zim Israel Navigation Company, Dr. Naftali Wydra stated recently that Israel's rapidly expanding merchant marine is expected to reach the one million ton mark by 1970. On its 15th anniversary he said that 11 cargo ships and bulk carriers totalling 149,000 tons deadweight will join the Zim fleet early in 1961. By 1962 the Israel merchant marine will have some 650,000 tons. Dr. Wydra stated that negotiations were under way for a $15 million flagship, to be in service in 1963. It will carry 1,000 passengers on its Haifa—New York run. A smaller ship, a 6,500-ton one-class liner, to be named *Moledet*, is now being built in a French yard and will be ready next May for service in the Mediterranean. Dr. Wydra added that this month Zim would start a new monthly cargo service to Mediterranean and Pacific Coast ports.

★

ERGONOMICS IN INDUSTRY

D.S.I.R. Conference in September

ERGONOMICS, the study of man in relation to his working environment, is the subject of a three-day conference being organised by the Department of Scientific and Industrial Research at the Connaught Rooms, London, from September 27 to 29. The object of this conference is to bring recent ergonomic research and industrial application to the notice of senior people in industry and to show where ergonomics fits in with the interests of production engineering, equipment design, work study training and industrial health.

Ergonomics is concerned with the improvement of industrial efficiency by ensuring that equipment is within the mental and physical capacities of normal people, taking into consideration such factors as the complexity of the job, noise, lighting and temperature. Speakers at the conference will represent industrial concerns, medical services, the trade unions and academic institutions. They will discuss the benefits to industry of a combined approach by anatomists, physiologists and psychologists, along with engineers, to problems of fitting the job to the man.

Further details of the conference (probable fee, inclusive of coffee, lunch and tea, 15 gns.) can be obtained from Miss H. M. Clay, D.S.I.R., 14-18 Cornwall Terrace, Regent's Park, London, N.W.1. Accommodation is likely to be limited.

★

FINANCIAL RESULTS

NOTES on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.

Shelvoke and Drewry

Shelvoke and Drewry, Limited, which manufactures heavy-duty fork trucks and special-purpose low-loading motor vehicles, reports that during the period November 1, 1959, to May 31, 1960, the number of machines ordered was 30 per cent greater than in the corresponding period last year, and the Letchworth works will be fully occupied in urgent production until at least the end of the year. Throughout the period the company has been very seriously hampered by shortage of materials and there is little hope that this position will improve in the near future. Additional floor space to accommodate the larger output is now imperative, and negotiations are now proceeding which will provide this on very favourable terms and without involving any heavy capital expenditure.

Gloucester Railway Carriage and Wagon

The directors of Winget, Limited, have announced a seven-year arrangement with the Gloucester Railway Carriage and Wagon Co., Limited, to use that company's surplus capacity at its Gloucester works. Gloucester is to put £300,000 into the Winget business, and Winget shareholders will be asked to put up £162,000 by a rights issue which will be accompanied by a scrip issue. The Winget business, it is explained, has expanded to the point where present manufacturing capacity is unable to cope with the current demand for its products. The company is also short of working capital. Gloucester Wagon's contribution is in the form of £300,000 6 per cent unsecured convertible loan stock, 1967-74, convertible into Winget ordinary between 1961 and 1964, on the basis of 50s. stock for every £1 nominal shares and between 1965 and 1967 on the basis of 55s. stock per £1.

★

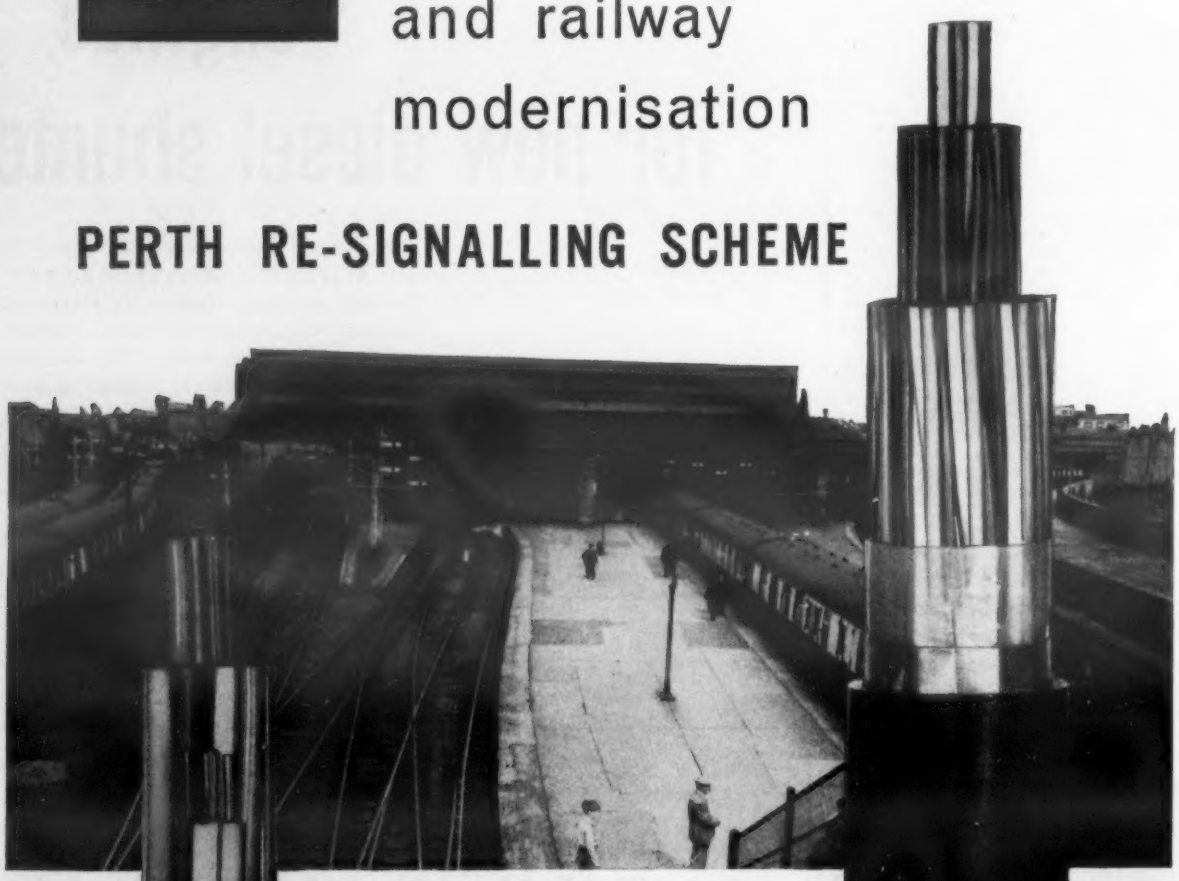
FORTHCOMING EVENTS

July 16.—S.R.L.D.S. Visit to Lowestoft concrete works.
July 17.—O.S. (N.W. and Yorks). Visit to Rawtenstall, Ramsbottom and Haslingden undertakings. Rawtenstall Corporation Transport, Bacup Road, Rawtenstall. 2.30 p.m.
S.R.L.D.S. Mystery tour of Surrey and Sussex.
July 19.—O.S. Tour of London Transport 630 trolleybus route on last day of operation.
July 23.—O.S. Study tour of Peterborough area independents.
P.W.I. Inspection of new L.T.E. works between Harrow and Rickmansworth.
O.S. (Northern). Study tour of Bishop Auckland area.
July 27.—L.R.T.L. J. H. Price, "Hurst Nelson Cars." 153 Drummond Street, N.W.1. 7 p.m.
September 5-11.—Society of British Aircraft Constructors. Annual flying display and exhibition. (Public days September 9-11).
September 12-16.—Municipal Passenger Transport Association. Conference at Douglas, I.o.M.
September 23-October 1.—Commercial Motor Show. Earls Court.

STC

and railway modernisation

PERTH RE-SIGNALLING SCHEME



All-Plastic insulated and sheathed Telecommunication cables have been manufactured and supplied by STC for the above Scottish Region communication modernisation scheme.

These cables are for carrier and voice frequency transmission and contain from 8 to 100 Pairs of 20 and 40/mile conductors.

27 Star Quad Voice Frequency Cable

19 Star Quad Composite Carrier and Voice Frequency Cable

Another STC communications cable project for British Railways

STC CABLE AND WIRE GROUP

60/68

Standard Telephones and Cables Limited

Registered Office: Connaught House, Aldwych, London, W.C.2

TELEPHONE CABLE DIVISION: NORTH WOOLWICH · LONDON E.16

SOCIAL AND PERSONAL

Britavema Chairman

AT the annual general meeting of the British Transport Vehicle Manufacturers Association (Britavema) on July 7, Mr. W. G. Allen, F.C.A., chairman and managing director, Atkinson Lorries (Holdings), Limited, was elected chairman for the ensuing year.

* * *

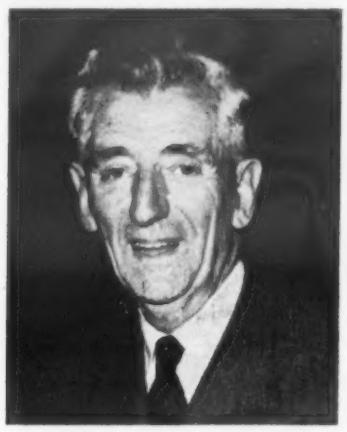
It is announced by the London Midland Region of British Railways that Mr. R. G. Lord has been made assistant district passenger manager, Birmingham.

* * *

Mr. W. A. Worth has been appointed an officer of the London Transport Executive, with the title of purchasing officer. He will be responsible to Mr. A. E. Shave, supplies officer, for the control of the work of the purchasing office.

* * *

We deeply regret to record the death, at the age of 70, of Mr. Herbert H. Crow, M.Inst.T., appointed chairman of the Road Haulage Association in May of this year and managing director of the Crow Carrying Co., Limited. Mr. Crow was a vice-president of the Institute of Transport and a member of the transport panel of the Transport Tribunal. The Crow Carrying company, of Barking and Manchester, was founded by his father 40 years ago. The fleet has grown to 185 vehicles. Mr. Crow was Junior Warden of the Worshipful Company of Carmen and a former chairman of the Metropolitan and South Eastern area of the R.H.A.



The late Mr. Herbert H. Crow

Mr. A. Bolton

* * *

A first prize of 250 guineas and eight additional prizes, bringing the total to 600 guineas, are being offered in a competition to find the best black-and-white picture of a Jones crane. Sponsored by George Cohen Sons and Co., Limited, which handles all U.K. sales of Jones cranes, the competition closes on December 31.

* * *

Following his appointment as chairman of B.O.A.C., Sir Matthew Slattery has tendered his resignation from the board of the Bristol Aeroplane Co., Limited, and of its associated company, Bristol Aerojet, Limited. Mr. W. R. Farnes, O.B.E., sales director of Bristol Aircraft, Limited, since 1956, has resigned from the board of Bristol Aircraft, Limited, and has been transferred to the Bristol Aeroplane Co., Limited, for duties connected with the latter company's other interests. He has been appointed a director of Bristol Aerojet, Limited, in succession to Sir Matthew Slattery and managing director of Bristol Aeroplane Plastics, Limited.

* * *

As reported recently, Mr. F. K. Farquharson has been appointed manager of the motor department of Shell-Mex and B.P., Limited, with effect from July 1, succeeding Mr. C. H. Selley. Mr. Farquharson joined Shell-Mex and B.P. in 1938 as a motor engineer attached to head office motor department and subsequently held similar appointments in Liverpool, Manchester and London, returning to head office in 1950. In 1952 he was appointed motor engineer of Scottish Oils and Shell-Mex, Limited, and aviation manager in 1956. In 1958 he was promoted to branch manager, Darlington, a position he relinquished upon his present appointment.

Mr. F. K. Farquharson

Mr. R. F. Bushrod

* * *

Mr. R. M. Shand, stationmaster, Perth, has been appointed stationmaster, Edinburgh Waverley.

* * *

The Institute of British Carriage and Automobile Engineers has elected Mr. D. G. Northam, chairman and joint managing director of A. W. Chapman, Limited, a fellow of the institute in recognition of outstanding service to it. Also elected a fellow is Mr. O. F. Rivers, a chief designer with the Daimler Co., Limited.

* * *

On July 6, at a private ceremony at Marconi House, London, Lord Nelson of Stafford, chairman of the English Electric group, presented to the National Trust the title deeds of some 40 acres of land at Poldhu, Cornwall—the former site of the historic radio station built by Guglielmo Marconi, the first to span the Atlantic with wireless telegraphy. The gift was accepted by Earl De La Warr, chairman of the Trust's Estates Committee.

* * *

Mr. T. A. Germaine, O.B.E., has been appointed assistant public relations officer, Eastern Region, B.R. He was formerly public relations assistant. Mr. Germaine was educated at the City of London School and joined the L.N.E.R. in 1930 in the locomotive running department. Having joined the Artists' Rifles in 1934, Mr. Germaine was commissioned on the outbreak of war and became senior War Office liaison officer (airborne), General Staff Officer 1, at the Ministry of Aircraft Production with the rank of lieut.-colonel. Returning to the railways in 1946, Mr. Germaine was first engaged on staff duties and then appointed on promotion as public relations representative in Manchester. He was awarded the O.B.E. (Military) in 1946 and also holds the Territorial Medal.

We regret to record the death of Monsieur J. Goursat, general manager of French Railways for a period after the 1939-45 war. He entered service with the former Northern Railway in 1930. Monsieur Goursat was 64.

* * *

Mr. A. W. McMurdo, M.B.E., E.R.D., B.Sc., A.M.I.C.E., has been appointed to the post of assistant civil engineer, North Eastern Region, B.R. Mr. McMurdo gained his B.Sc. degree at Glasgow University and entered the service of the London Midland and Scottish Railway in 1932 as a civil engineering pupil. Mobilised as a member of the Supplementary Reserve in 1939, he served at home and abroad in the Royal Engineers, attaining the rank of lieut.-colonel. Following his return to railway service in 1950 he transferred to the Western Region as assistant district engineer, Plymouth, and took up a similar appointment at Paddington in 1953. He was appointed district engineer, Shrewsbury, in 1954 and in 1957 became district engineer, Wolverhampton, the post he now vacates.

* * *

Mr. A. Bolton, senior director of Ribblesdale Coachways, Limited, Blackburn, who has been elected chairman of the Passenger Vehicle Operators Association, is one of the pioneers of passenger road transport services in Lancashire. He operates more than 30 vehicles on extended tours, excursions and daily services. With his father, the present company was formed in 1921. For three years Mr. Bolton was chairman of the North Western area of the P.V.O.A. and he takes an active part in local affairs.

* * *

To direct the forthcoming introduction to this country of Mercedes diesel vehicles, Mr. F. Tinsdale has been appointed commercial vehicle sales manager of Mercedes-Benz (Great Britain), Limited. He was previously sales manager of the mechanical handling division of R. A. Lister and Co., Limited.

* * *

Mr. G. C. Sewell, transport manager for the South Durham Steel and Iron Co., Limited, of West Hartlepool and Middlesbrough, has been appointed a member of the Transport Users' Consultative Committee for the North-Eastern area. The other industrial representative on the new committee is Mr. J. Gerrard (Wright Anderson and Co., Limited). Representing commerce is Mr. I. S. McKay, distribution manager, Billingham Division, Imperial Chemical Industries, Limited. He is a member of the Tees-side Chamber of Commerce transport committee. The B.T.C. members are Messrs. L. M. Sayers and B. T. Pratt.

* * *

The Tilling Group has announced that Mr. R. F. Bushrod, M.B.E., director and general manager of the Lincolnshire Road Car Co., Limited, has been appointed director and general manager of the Eastern National Omnibus Co., Limited, and Tillings Transport (B.T.C.), Limited. The appointment will take place in the near future. Mr. Bushrod was educated at Westminster School and East London College (London University) and joined the National Omnibus and Transport Co., Limited, as a cadet in 1930. He had engineering training in the company's works and at the Leyland works, together with experience in all branches of traffic department operation. Mr. Bushrod was subsequently traffic assistant, Eastern National Omnibus Co., Limited. He became assistant traffic manager in 1937. He was appointed traffic manager, Wilts and Dorset Motor Services, Limited, in 1944, and additionally assistant general manager in 1950. In 1953 he was made general manager of the Southern Vectis Omnibus Co., Limited, and shortly afterwards became a director. He transferred to similar positions with the Lincolnshire Road Car Co., Limited, in 1957. During the 1939-45 war he served in the 6th Essex Batt. and 2001 Essex and Suffolk Home Guard M.T. Column and subsequently was intelligence officer, 8th Batt. Wiltshire Home Guard.

* * *

The late Lord Glyn, former director of the L.M.S.R. and M.P. for Abingdon, left £110,036 gross (duty paid £47,560).

* * *

Mr. K. L. Paynter has been appointed to the board of Continental Ferry Trailers, Limited, Barking, a Transport Development Group company associated with I. Leftley, Limited.

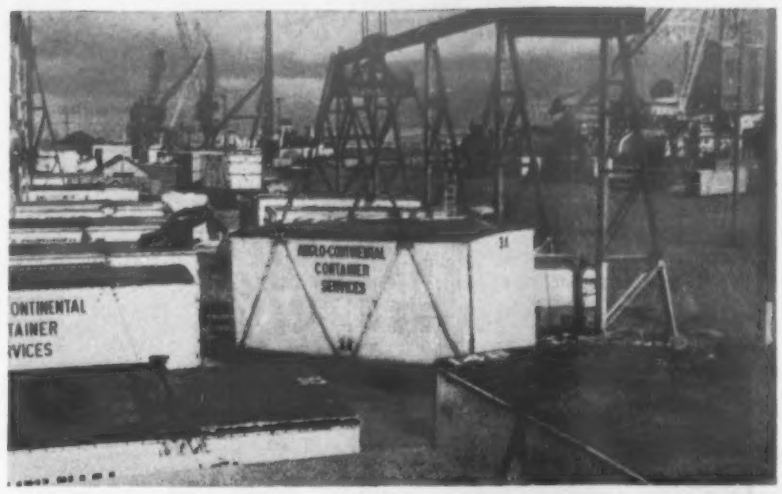
* * *

The appointment of a national chairman of the Road Haulage Association to succeed the late Mr. Herbert H. Crow will be considered by the national council of the association at its meeting on September 29, ten days before the annual conference opens.

* * *

At the last competition meeting of the London area of the Transport Golfing Society the first prizewinners were Messrs. R. A. Bargate (London Metal Warehouses, Limited) and E. H. Rundle (A.E.C. (Sales), Limited). The runners-up were Messrs. C. B. Blomfield (chief engineer, United Counties Omnibus Co., Limited) and T. Field-Rayner.

Daily door-to-door express container services in especially-designed container-ships to and from NORTHERN IRELAND



- All parts of Northern Ireland, Scotland and England served
- Greatly Minimised Risk of Loss by Theft or Damage
- Free Insurance (General Merchandise)—£800 per ton
- Closed Security-Locked Containers
- Insulated Containers for Perishable Foodstuffs—for Hygiene and Cleanliness
- Open Containers and "Flats" for Unpacked Machinery etc.
- All Goods Conveyed with Minimum Packing

Door-to-door inclusive rates

ANGLO-CONTINENTAL CONTAINER SERVICES (London) Ltd and (Belfast) Ltd

LONDON 79 Dunton Road SE 1 *Bermondsey 4881/4* (Head Office) and Elland Road SE 15 *New Cross 4885/7* (Traffic Depot) PRESTON The Docks *Preston 86742/4* LARNE (Northern Ireland) Bay Road *Larne 2331/2* BELFAST 35/39 Middlepath Street *Belfast 59261/5* MANCHESTER 2 270/1 Royal Exchange Buildings *Blackfriars 9287/9* GLASGOW 10 Bothwell Street *C2 City 6997/8* (Offices) and 17/21 Tylefield Street SE *Bridgeton 2277/8* (Traffic Depot) ARDROSSAN (Ayrshire) Harbour Street *Saltcoats 1911/2* BRISTOL 61 Park Street *Bristol 25435/6*

PICKFORDS HEAVY HAULAGE SERVICE
Abnormal Loads • Lifting
MOBILE CRANES FOR HIRE • Branches in all large towns

CROW CARRYING COMPANY, LTD
REGD. TRADE MARK
Harts Lane, North Street, Barking, Essex
Tel: Rippleway 0366 (4 lines)
Manchester Depot:
231 Greengate, Middleton Junction, Middleton, Manchester. Tel: Failsworth 3353 and 2242

for the
TRANSPORT
of
BULK LIQUIDS
POWDERS
GASES

SILVER ROADWAYS LTD.
Reliable Trunk Services to all Parts

BRISTOL
8 The Grove, Bristol 1
BRISTOL 22315

BIRMINGHAM
323 High St., West Bromwich, Staffs.
WEST BROMWICH 2801

LLANELLY
Morfa Works, Llanelly
LLANELLY 4303

LONDON
22-24 Bermondsey Wall West, S.E.16
BERmondsey 4533

CARDIFF
10 Dumfries Place
CARDIFF 21631

SWANSEA
Exchange Buildings
SWANSEA 54171/5

GLASGOW
12 Dixon Street, C.2
CITY 5381

LIVERPOOL
11 Old Hall Street, Liverpool, 3
CENTRAL 6386

NOTTINGHAM
Pavilion Building, Pavilion Road, West Bridgford
NOTTINGHAM 83481

REPORTING RAILWAY PROGRESS **10**

MEN AT WORK

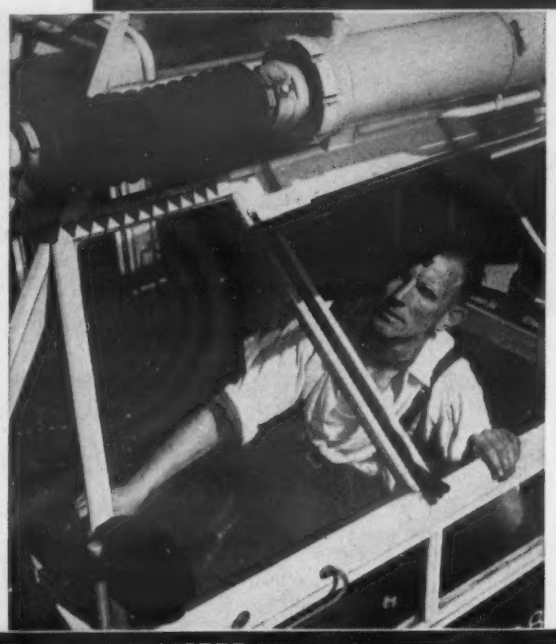
NEW SKILLS FOR NEW TASKS

This series has shown a new railway system in the making—new lines, new equipment, new motive power, new standards of regularity and speed. But re-shaping the network does not stop at machinery and materials. It is men who work the machines and men who control their movement. All over British Railways, this time of change is a challenge for the staff. There are modern skills and techniques to be learnt, there is intensive re-training—and above all, opening opportunity at many levels.

DIESEL DRIVER

SIGNALMAN

DIESEL MAINTENANCE MAN



FREIGHTLIFTER

YARDMASTER

SHUNTING DRIVER

COMPUTER OPERATOR

SIGNAL MAINTENANCE MAN

FFIC MANAGER

MAN OF TOMORROW

. . . NEW workers in the new railway age

Change, all down the line . . . and for the railway worker at the centre of Britain's coming new railway age. . . . The man at the control panel in the diesel's cabin. The man who guides trains from the power-operated signalbox. The diesel mechanic and fitter learning a new and specialised trade. The driver of the Freightlifter truck which handles 6-ton containers as if they were parcels. The yard master who directs the traffic flow with the aid of closed-circuit television. The shunter driver, with a radio-telephone at his side. The computer operator to whom statistics is no longer drudgery. The signal maintenance man who examines the apparatus with an eye as fine as a needle. The traffic manager with the new outlook needed for an increasingly complex job. And the apprentices – the coming generation of railwaymen, the schoolboys of the network whose classrooms are the electric and diesel locomotives. . . . These are the technicians in peaked caps, the organisers in a thousand back rooms, who will be running the faster, cleaner, finer trains that will carry you and your goods – and will give Britain the best railways in the world.

Photographs : John Chillingworth and Roger Wood

This series of advertisements was designed by H. J. Deverson

Printed by Odhams (Watford) Limited, St. Albans Road, Watford, Herts, for and published by Modern Transport Publishing Co., Limited, Russell Court, 3-16 Woburn Place, London, W.C.1.